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SOCIAL PSYCHOLOGY

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THEOLOGICAL SEMINARY

KANSAS CITY, KANSAS

SOCIAL PSYCHOLOGY

BY

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HOUGHTON MIFFLIN COMPANY

BOSTON · NEW YORK · CHICAGO · DALLAS · SAN FRANCISCO

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JOHNSON REPRINT CORPORATION
111 Fifth Avenue, New York, N.Y. 10003

JOHNSON REPRINT COMPANY LTD.
Berkeley Square House, London, W. 1

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First reprinting, 1967, Johnson Reprint Corporation
Printed in the United States of America

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PREFACE

Only within recent years have the psychologists of this country turned their attention seriously toward the social field. With one or two exceptions, the earlier works upon this subject, as well as a number of recent ones, have been written by sociologists. To these writers psychologists owe a debt of gratitude for revealing new and promising opportunities for applying psychological science. Sociological writers, however, have given their attention mainly to the larger aspects, the laws of behavior and consciousness as operative in social groups. In so doing they have naturally adopted as materials the concepts of human nature provided by the older psychologists of good standing. With the recent expansion of psychology and growth of psychological insight, it has become necessary to modify many of these earlier conceptions and to add not a few new ones. Social science has not yet profited by taking account of this advancement, but has lagged behind in its fundamental assumptions regarding human nature. A need has therefore arisen of bringing to the service of those interested in social relationships the most recent psychological investigation and theory. I have written this book as an attempt in the direction of supplying this need.

More specifically, there are two main lines of scientific achievement which I have tried to bring within the scope of this volume. These are the *behavior viewpoint* and the *experimental method*. A considerable number of psychologists are now regarding their science as one fundamentally, though not exclusively, of behavior. This approach has revealed a wealth of principles for the understanding of human beings — understanding, that is, in the truest sense, namely, the *explanation* of their acts. Like every fundamental viewpoint in a science, behaviorism is simply a convenient way of conceiving the facts. Many of its hypotheses are still unproved. Yet, on the whole, it fits the facts so well, and is so replete with possibilities for gaining further knowledge, that it should be of basic value to students of social science.

While the behavior viewpoint has been developing a richer interpretation of the facts, the method of experimentation has been yielding the facts themselves. Psychologists have recently conducted many investigations either social in their setting or suggestive of important social applications. The bearing of these experiments upon social psychology has in some cases been noted; but, so far as I am aware, no attempt has been made to collect them in a systematic way. My second purpose, therefore, has been to fit these experimental findings into their broader setting in social psychology, and to draw from them certain conclusions of value to that science.

In addition to these two main fields of progress, there is a third which deserves especial recognition. I refer to the Freudian contributions to psychology. Notwithstanding its investment in a dogmatism which is repellent to many, psychoanalysis has unearthed facts which are valuable for the understanding of human nature. The bearing of these facts upon social conflict I have discussed in various places throughout the book, and particularly in Chapter XIV.

There are certain innovations in the treatment of the subject for which it may be well to prepare the reader. To one interested primarily in social relations it may seem that I give an unusual amount of space to purely individual behavior. This is in accordance with my purpose, explained in Chapter I, to adhere to the psychological (that is, the individual) viewpoint. For I believe that only *within the individual* can we find the behavior mechanisms and the consciousness which are fundamental in the interactions between individuals. I have, therefore, postponed until the last chapter almost all the material treated in books which have been written from the sociological viewpoint. If the reader finds that not until the final chapter has he arrived upon familiar ground, I shall venture to hope that his understanding may have been increased through treading the less familiar pathways.

Another deviation will be found in the treatment of instincts. The instinct theory has fulfilled an important mission in discrediting the earlier, mechanical theories of motivation. The notion, however, of complex inherited patterns of behavior is in turn suc-

cumbing to the process of analysis and closer observation. Some psychologists have, indeed, gone too far in their rejection of instincts, in that they have denied the existence of any definite inborn modes of response. The instinct theory was right in asserting that there is an hereditary basis for behavior; its error lay in its failure to analyze behavior into its elementary components of inheritance and acquisition. The theory of prepotent reactions, developed in Chapter III, aims to combine the virtues and omit the defects of both sides of the controversy.

The book is intended to be used as a text in courses in social psychology and in courses in the various social sciences which give a part of their time to the psychological foundations. I hope also that it may prove of service, not only to college students, but to all who are interested in the social adjustments of individuals and the broader problems of society. For the benefit of those to whom psychology is a new subject, a chapter upon the physiological basis of behavior has been included. Teachers will find it advisable to assign the chapters in the order in which they occur. The closing chapter is to be regarded merely as an outline. It was written primarily to guide the student in his application of the principles of social psychology to sociological questions. It is suggested that, where the book is used for a full year's course, a large portion of the second semester be given to expanding this last chapter with the aid of the references appended. Throughout the course the student should be directed in collecting illustrations and incidents from contemporary social life for the purpose of testing or applying the principles discussed.

ACKNOWLEDGMENTS

FOR the origin of my interest in social psychology I am indebted to the memory of Hugo Münsterberg. It was he who suggested the setting for my first experiments and who foresaw many of the possibilities which have been developed in this book. To my former teacher and colleague, Professor H. S. Langfeld, my sincere thanks are due for a careful reading of the manuscript and for many valuable criticisms and constructive suggestions. I wish to express equal gratitude to my present colleague, Professor J. F. Dashiell,

for reading the manuscript and offering effective suggestions concerning the theories advanced. I owe much to my association with Professor W. F. Dearborn and Dr. E. B. Holt, and have used several illustrations derived directly or indirectly from their teaching. In particular, I wish to acknowledge my indebtedness to my brother, Dr. G. W. Allport, both for assistance with the manuscript and for stimulating discussions of some of the problems raised. He also kindly furnished me with a number of facts from his own research, of which mention has been made in the text. My thanks are due also to Professor J. F. Steiner for advice regarding the sociological aspects of the last chapter. Valuable comments upon several chapters were given by Miss Ada L. Gould whose kindness I desire gratefully to acknowledge. To our departmental secretary, Mrs. G. Wallace Smith, I am indebted for effective work in preparation of the manuscript, as well as for helpful suggestions in regard to style. The theory of emotion developed in Chapter IV appeared in substantially the same form in the *Psychological Review* for March, 1922. My thanks are due to the editor of that journal for permission to republish it here. Finally, I wish to thank the various publishers who have given their permission to reproduce certain of the illustrations.

FLOYD H. ALLPORT

CHAPEL HILL, NORTH CAROLINA
December, 1923

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SOCIAL PSYCHOLOGY

CHAPTER I

SOCIAL PSYCHOLOGY AS A SCIENCE OF INDIVIDUAL BEHAVIOR AND CONSCIOUSNESS

The Present Standpoint in Psychology. Psychology is the science which studies behavior and consciousness. Of these two terms behavior is placed first because it is an explanatory principle, and therefore more fundamental. The essential formula for behavior is as follows: (1) Some need is present in the organism, such as the necessity of withdrawing from weapons injuring the body, or the need to obtain food or to secure a mate. The need may also be of a derived and complex order; for example, the necessity of solving some problem upon which the satisfaction of the more elementary wants depends. (2) The organism acts: it behaves in such a manner as to satisfy the need.

Need, in the sense here employed, signifies a biological maladjustment. The relation existing between the organism and its surroundings is injurious rather than beneficial to life, and must be changed if the individual is to survive. More specifically, a need arises when certain objects excite the external sense organs, as in an injury to the skin; or when muscular changes in the internal organs, as in hunger, excite sense organs *inside* the body. These excitations, or *stimulations*, set up a current of nervous energy which is propagated inward to the central nervous system and outward again to the muscles controlling bodily movement, causing them to act in such a way as to fulfill the need through which the chain of events originated; that is, in the examples used, to withdraw from harm and to obtain food. The making of these adaptive movements is called the *reaction*.

But the word 'need' may be used in another sense beside that of

biological requirement. It may denote a felt, or *conscious*, lack, as when we say we feel hunger or feel the need of companionship. Need in this sense is a part of the immediate and private experience of each individual. We can never be directly aware of the felt needs of others; they can only be inferred by observing their behavior when they are biologically maladjusted to their surroundings (need in the former sense). This personal awareness which accompanies behavior extends to other facts beside need or desire. We are aware of the stimulating object, aware of fear or anger when these emotions are a part of our adjustment to it, aware of our purpose in making the reaction, and of our thinking and acting toward that end. These conscious states likewise are known in others only by inference from appropriate reactions.

It is clear that consciousness stands in some intimate relation to the biological need and the behavior which satisfies it. Just what this relation is still constitutes an unsolved and perplexing problem. One negative conclusion, however, seems both justified and necessary as a working principle: namely, that consciousness is in no way a *cause* of the bodily reactions through which the needs are fulfilled. Explanation is not derived from desire, feeling, will, or purpose, however compelling these may seem to our immediate awareness, but from the sequence of stimulation — neural transmission — and reaction. Consciousness often accompanies this chain of events; but it never forms a link in the chain itself.[1]

To present detailed evidence for the stand we have just taken would lead us too far afield. If the reader is inclined to challenge this hypothesis, this book should be weighed as an argument for its validity. Any hypothesis must rest its case upon its capacity for explaining the phenomena with which it deals, in this case the phenomena of human action. If it fails in this, it must be rejected.

[1] To illustrate, let us consider the act of satisfying hunger. When a man goes to dinner the combined stimulation from the sound of the bell and his restless stomach enters his nervous system and goes out to the muscles of walking to the dining-room, sitting, and eating. The man himself experiences hunger pangs, and considers these sufficient reason for his eating. Actually, however, "hunger sensations" are only a *description* of the consciousness *accompanying* the behavior. The cause of going to the table lies in the sequence stomach-stimulation — nerve transmission — reaction. The act could be equally well *explained* if the subject had no consciousness whatsoever.

While there remain many problems yet to be solved, a material advance has been made in psychology since the adoption of the mechanistic and behavior viewpoint. Much of the confusion resulting from including conscious or 'mental' entities in the sequence of cause and effect has been dispelled; and there is promise of wide future development under the guidance of the behavior hypothesis.

There are a few psychologists who maintain that, since consciousness does not explain events, it has no place in the science which studies behavior. This is a serious mistake. No scientist can afford to ignore the circumstances attendant upon the events he is observing. Introspection on conscious states is both interesting in itself and necessary for a complete account. The consciousness accompanying reactions which are not readily observable also furnishes us with valuable evidence and information of these reactions, and thus aids us in our selection of explanatory principles within the mechanistic field. The phenomena we shall study in this book comprise both behavior and consciousness, with emphasis upon the former because it holds the key to explanation. The introspective account will aid in our interpretations and will supplement them upon the descriptive side. Having outlined the position of present-day psychology as a whole, we may now approach the special branch which is our present interest.

The Province of Social Psychology. Behavior in general may be regarded as the interplay of stimulation and reaction between the individual and his environment. Social behavior comprises the stimulations and reactions arising between an individual and the *social* portion of his environment; that is, between the individual and his fellows. Examples of such behavior would be the reactions to language, gestures, and other movements of our fellow men, in contrast with our reactions toward non-social objects, such as plants, minerals, tools, and inclement weather. The significance of social behavior is exactly the same as that of non-social, namely, the correction of the individual's biological maladjustment to his environment. In and through others many of our most urgent wants are fulfilled; and our behavior toward them is based on the same fundamental needs as our reactions toward all objects, social

or non-social.[1] It is the satisfaction of these needs and the adaptation of the individual to his whole environment which constitute the guiding principles of his interactions with his fellow men.

Social Psychology as a Science of the Individual. The Group Fallacy. Impressed by the closely knit and reciprocal nature of social behavior, some writers have been led to postulate a kind of 'collective mind' or 'group consciousness' as separate from the minds of the individuals of whom the group is composed. No fallacy is more subtle and misleading than this. It has appeared in the literature under numerous guises; but has everywhere left the reader in a state of mystical confusion. Several forms of this theory will be examined presently. The standpoint of this book may be concisely stated as follows. There is no psychology of groups which is not essentially and entirely a psychology of individuals. Social psychology must not be placed in contradistinction to the psychology of the individual; *it is a part of the psychology of the individual*, whose behavior it studies in relation to that sector of his environment comprised by his fellows. His biological needs are the ends toward which his social behavior is a developed means. Within his organism are provided all the mechanisms by which social behavior is explained. There is likewise no consciousness except that belonging to individuals. Psychology in all its branches is a science of the individual. To extend its principles to larger units is to destroy their meaning.

Psychological Forms of the Group Fallacy. 1. The 'Crowd Mind.' The most flagrant form of the group fallacy is the notion of 'crowd consciousness.' It has long been observed that persons in an excited mob seem to lose control of themselves, and to be swept along by tempestuous emotions and impelling ideas. It is therefore alleged that there is a lapse of personal consciousness and a rise of a common or 'crowd' consciousness. The objections to this view are fairly obvious. Psychologists agree in regarding

[1] An interesting point of difference, however, exists in the social as distinguished from other environmental relations. In the social sphere the environment not only stimulates the individual, but is stimulated *by* him. Other persons not only cause us to react; they also react in turn to stimulations produced by us. A circular character is thus present in social behavior which is wanting in the simpler non-social adjustments.

consciousness as dependent upon the functioning of neural structure. Nervous systems are possessed by individuals; but there is no nervous system of the crowd. Secondly, the passing emotion or impulse common to the members of a crowd is not to be isolated introspectively from the sensations and feelings peculiar to the individual himself.

Another argument for crowd mind proceeds as follows. The turbulent and riotous deeds of a mob point to the existence of a 'mob consciousness,' for such behavior would be quite unthinkable for men in their right minds taken separately and in isolation. There is an element of absurdity in this argument: we are asked to explain the nature of crowd action by considering the individuals in isolation; that is, when there is no crowd at all. The mere adding up of the reactions of isolated individuals has no meaning whatsoever beyond mere enumeration. But *given the situation of the crowd* — that is, of a number of persons within stimulating distance of one another — we shall find that the actions of all *are* nothing more than the sum of the actions of each taken separately. When we say that the crowd is excited, impulsive, and irrational, we mean that the individuals in it are excited, impulsive, and irrational. It is true that they would probably not be in this state if they were in isolation from one another; but that means that only in the close group each is so stimulated by the emotional behavior of others that he becomes excited to an unusual degree. The failure to take note of these interstimulations and reactions between individuals has given rise to the illusion that a 'crowd mind' suddenly descends upon the individuals and takes possession of them. The crowd as a whole has been attended to rather than the individual members. Spectacular mob action has thus combined with loose terminology to draw attention away from the true source of crowd explanation, namely, the individual.

2. The 'Collective, or Class, Mind.' Another sense in which the group is sometimes said to possess a consciousness and behavior of its own is in the *sameness* of thought and action among the members of such a body as an army, a political party, or a trade union. In these groupings the uniformities of mind are considered as elevated to the position of a separate entity participated in by all. One

hears, for instance, such phrases as "the spirit of the meeting," "the community of opinion," "the army personality," and "*esprit de corps*." If these terms are used in a literal, rather than a metaphoric, sense, they partake of the group fallacy. A particular segment of the individual's life is picked out because of its similarity with the corresponding segments in other individuals, and is set up as a separate psychological entity. The question, of course, arises as to what becomes of the spirit of the meeting when it is broken up and the minds of its members are concerned with other matters; or what becomes of the army personality when the soldier is off on furlough. The answer to the latter question is that the so-called 'army personality' is merely a set of military habits belonging to the individual. He retains these as neurological patterns when off on leave, and employs them in action when under military duty. He does not suddenly acquire the 'mind of the army' upon coming into the presence of his fellow soldiers, any more than a man attains skill upon the violin by coming into an assembly of accomplished violinists. In both cases we are dealing with individually acquired habits.

Collective consciousness and behavior are simply the aggregation of those states and reactions of individuals which, owing to similarities of constitution, training, and common stimulations, are possessed of a similar character. Many social applications follow from this homogeneity. All men in political life try to "keep their finger on the pulse of the public," and neglecting minor dissensions strike the high peak of the curve of "public opinion." In this sense the collective mind is not an entity in itself, but a practical working concept. It is a convenient designation for certain universal types of reaction which interest political leaders because they represent points of contact with thousands of *separate individuals* and therefore serve as means of acquiring widespread control. Thus 'collective opinion' exists only in the form of a class concept or symbol of thought.

Similarly, the General issues an order and all the men of the division or army obey as one man. Owing to disciplined and uniform response, he is able to handle this body of men as if it were one individual, but with a result a thousand-fold more potent. It is

expedient, therefore, to speak of the entire body as a unit, and call it an army, a corps, or a division. We must not forget, however, that the 'one-ness' lies not in the army as an entity, but solely in the ability of its members to act uniformly and to be controlled as one man. It is in the General's attitude toward the aggregation rather than in the aggregation itself. The General issues his orders to the *army;* but it is always *individual men* who obey the orders.

Language makes it possible for us to speak conveniently about the collective exploits of a body of this sort. We say "the army captured the city" and are as correctly understood as though we had said "the individuals of the army captured the city." Similarly, we state that the 'crowd' stoned the martyr or stormed the Bastille. But language also has its disadvantages. So long as we speak of overt action there is no possibility of confusion — we obviously mean that *individuals* performed the acts in all cases. When, however, we read in the words of the older social writers that the *crowd* 'feels' and 'wills,' or 'is emotional,' 'intolerant,' 'immoral,' and the like, we come perilously near to regarding the crowd as possessing a mind of its own, apart from the minds of its individual members. The very intangibility of these states, combined with the striking vehemence of their manifestation, aids language in establishing this illusion.

In cases, therefore, where psychological factors are involved, it is better to use the less facile but more exact phrase, "the *individuals* in the crowd are emotional, intolerant, immoral," and so on. This is no mere pedantry; for it lays the emphasis upon the true source to which we must look for an explanation of crowd phenomena. If we believe that it is the crowd mind rather than the individual's which exhibits the altered phases of consciousness, all explanation fades into mere description. Crowds, for example, are alleged to be irrational or suggestible merely because that is the nature of crowd mentality. Thus crowd behavior is explained in terms of what crowds generally do — a circular explanation, indeed! There is, moreover, according to this view no reason for one crowd to exhibit different mental characteristics from another; all are subject to the same laws of emotionality, irrationality, simple-mindedness, and the like. Against these inadequacies and fallacies we must again

urge the importance of going below group phenomena to a deeper level, the individual in the group. It is only through social psychology as a science of the individual that we can avoid the superficialities of the crowd mind and collective mind theories.

3. **The 'Group Mind.'** A third form of the group fallacy remains to be considered. This is the notion that a social mind exists, not in crowd consciousness nor mental collectivity, but in the sense of *permanent organization.* People are said to be closely united through attitudes of mutual respect and coöperation, and through adherence to a culture, a tradition, or a symbol of national life. Institutions fix these various forms of human association, and carry them into the very center of the individual's life. A university, for example, consists essentially, not of buildings, equipment, or even specific professors, but of a system of ideals and interrelations among human beings expressed in intangible, and, as some consider, *mental* form. The mind of this sort of group is therefore a kind of 'mental structure' of organization, distinguishable from the minds of the individual members. Individuals may come and go; but this organized mental life goes on indefinitely. The age-old solidarity of the Catholic Church, the Jewish race, or the English nation illustrates this form of social entity to which a mental existence is ascribed separate from the existence of the individuals composing it.

When closely examined this hypothesis appears to be a subtle variety of the collectivity and crowd theories. The organization of a university exists really in the attitudes which individual teachers and students have toward one another and toward the body of recorded and transmitted rules and traditions of the institution. We have here a collection of similar response tendencies. Each member also knows that the others respect and obey the standards which they all hold in common in the same way that he respects and obeys them; and this awareness seems to knit the group more firmly together. This again is simply a set of common ideals and feelings rendered more uniform by the conscious effects of one individual upon another. It is a type of uniformity differing only in complexity from the unified responses of the collectivity theory.

In order to answer the question where this mental structure of the group exists, we must refer again to the individual. Nationality, Free-Masonry, Catholicism, and the like are not group minds expressed in the individual members of these bodies; they are sets of ideals, thoughts, and habits repeated in each individual mind and existing only in those minds.[1] They are not absorbed in some mysterious way from the group life, nor are they inherited. They are learned by each individual from the specific language and behavior of other individuals. Where such continuity of social contact ceases the organized life of the group disappears. Were all the individuals in a group to perish at one time, the so-called 'group mind' would be abolished forever. It is not necessary to have the *same* personnel for continuity of group structure; but there must be *some* personnel.

Conclusions regarding the Social Mind. At every point we are thus led back to the individual as the locus of all that we may call 'mind.' Alike in crowd excitements, collective uniformities, and organized groups, the only psychological elements discoverable are in the behavior and consciousness of the specific persons involved. All theories which partake of the group fallacy have the unfortunate consequence of diverting attention from the true locus of cause and effect, namely, the behavior mechanism of the individual. They place the group prior to this mechanism in order of study, and substitute description of social effects in place of true explanation. On the other hand, if we take care of the individuals, psychologically speaking, the groups will be found to take care of themselves. The reasons for our repeated insistence upon regarding social psychology as a phase of the psychology of the individual should now be fairly evident.

Biological Forms of the Group Fallacy. The psychological varieties of the social entity hypothesis have a curious parallel upon the biological side. Many analogies have been pointed out between the human organism and the organized group or society.

[1] Many of the supporters of the belief in a mind of the group independent of the nervous systems of individuals belong to the philosophical school known as *objective idealists*. Mind, in the larger and impersonal sense, is for them the true reality; hence they find no difficulty in conceiving of an objective group mind over and above the minds of the individuals, or comprising the minds of the individuals.

Plato likened the three portions of the ideal state, the rulers, the warriors, and the workers, to the three corresponding portions of the body, the head, the breast, and the abdomen respectively. Spencer found the 'body politic' to resemble the human body in its distributing agencies (arteries) and its controlling and communicating functions (nerves), etc. Another theory assigns separate minds to (1) individual cells in the organism itself, (2) the organism as a collection of these cells, and hence (3) society as an aggregation of conscious organisms.[1] This last theory combines the notion of the social organism with that of the social mind. Where these biological formulations are advanced only as metaphors (as in the case of Plato and Spencer), they can scarcely be called fallacies. As analogies they are picturesque but exaggerated. Although we can readily agree that there is organization within social groups, it is difficult to speak seriously of these groups as organisms. In the first place, there is no continuity of tissue between the units of the group as there is between cells and organs of the body. Secondly, the organization of the individual's body is based upon integration, or the welfare of the *entire individual;* whereas, in the social body, the controlling principle of organization and function is the interest of the *parts;* that is, the separate individuals.[2]

The individual, then, is the true organism, as he is the psychological unit of society. The group merely furnishes him with a social environment in which he may react. And organized society is essentially a set of rules for guiding his reactions so that they do not trespass upon the life processes of his fellow organisms.

Social Psychology and Sociology. Behavior, consciousness, and organic life belong strictly to individuals; but there is surely occasion for speaking of the group as a whole so long as we do not regard it as an organism or a mental entity. The study of groups is, in fact, the province of the special science of *sociology.* While the social psychologist studies the individual in the group, the sociologist deals with the group as a whole. He discusses its formation, solidarity, continuity, and change. Psychological data, such

[1] Espinas: *Les Sociétés animales.* Paris, 1877.

[2] For an elaborate and ingenious social organism metaphor see Münsterberg's *Psychology, General and Applied,* pp. 265–69.

as innate reactions and habitual and emotional tendencies of individuals, are explanatory principles upon which sociology builds in interpreting the life of groups. Other sciences also contribute to the same end. Certain sociologists speak of these universal human reactions as "social forces." For example, hatred of a common enemy may be designated as a social force in a country at war. The social psychologist's task is in this case the explanation of the causes and conditions of hatred in the individual, and the part played by his behavior in arousing this emotion in others. The sociologist is interested rather in the widespread effects of this reaction in unifying the group and producing concerted responses of great power in struggles between opposing groups.

Psychology in general, and social psychology in particular, are thus foundation sciences of sociology. Social psychology has in fact grown up largely through the labors of the sociologists. It is a mistake, however, to suppose, as some have done, that it is a branch of sociology rather than of psychology. Professor Ellwood, for example, prefers for social psychology the designation 'psychological sociology.' This seems to the present writer to minimize unjustly the claims of the psychologist. It is surely a legitimate interest to consider social behavior and consciousness merely as a phase of the psychology of the individual, in relation to a certain portion of his environment, without being concerned about the formation or character of groups resulting from these reactions. In spite of the good offices and interests of the sociologists the two sciences must remain separate branches of inquiry.

Behavior and Consciousness in Social Psychology. The influence of one individual upon another is always a matter of behavior. One person stimulates and the other reacts: in this process we have the essence of social psychology. The means, however, by which one person stimulates another is always some outward sign or action; *it is never consciousness.* Both the stimulating and the reacting behavior may be at times *accompanied by* a social type of consciousness in the respective individuals; but there is, so far as we know, no immediate action of the consciousness of one individual upon the consciousness or behavior of another.[1] An attempt

[1] The hypothesis of telepathy is not sufficiently established to be admitted as a possibility in the present issue.

is current in certain quarters to limit the conception of society and the field of social psychology to types of social interaction where consciousness of others and of social relations exists. From the standpoint of the present work this limitation is both non-essential and narrow. Consciousness, as we have just intimated, exerts no influence, and therefore explains nothing in mutual reactions of human beings. In social psychology, as in non-social branches of the science, its rôle is descriptive rather than explanatory. Even in the most socialized and conscious of groups there are no forces holding the group together, and no means of arriving at community of thought or organized life except through the interstimulation of one individual by the behavior of another. It is, moreover, not a '*mental*' interstimulation, if by this term is meant a type of stimulation different from the physiological, for no type of stimulation other than physiological exists. It would seem more suitable, therefore, to admit to the field we are considering all forms of animal life in which we find definite social behavior; that is, reactions of individuals to one another. The question whether social consciousness accompanies such social behavior in the lower forms of life, though of speculative interest, may be waived as non-essential in our present definition of social psychology.

The element of social consciousness, however, will be by no means neglected in the following chapters. It will be recognized wherever it is significant in the whole situation or helpful in evaluating the principles of behavior. A special chapter also will deal with social consciousness as an interest in itself. We shall seek a just proportion between the two phases of the social life of the individual.

A Working Definition of Social Psychology. Plan of its Treatment in this Book. Defining a science is of value only for the purpose of concentrating attention upon a group of allied problems. With this practical rather than dogmatic aim in view, the following definition of our field is proposed: *Social psychology is the science which studies the behavior of the individual in so far as his behavior stimulates other individuals, or is itself a reaction to their behavior; and which describes the consciousness of the individual in so far as it is a consciousness of social objects and social reactions.* More briefly stated, social psychology is the study of the social behavior and the social consciousness of the individual.

Inasmuch as we have found the explanatory principles of social psychology to center in the individual himself, our first concern will be with the individual in his social aspects. It is largely through the profound effects of social influences in infancy, childhood, and youth that the habits, abilities, and personality of the adult are developed. The individual must be considered both as a product of social influences and as a potential unit in social interaction. The second portion of the book will proceed with the actual process of interstimulation and reaction between individuals as units of society. Our main theme, the social behavior of the individual, will be here developed. In particular, behavior will be discussed both as affording stimulation to others and as reaction to such stimulation *from* others. Finally, some attempt will be made to bring the laws of social behavior into the province of the sociologist, and to apply them to the theoretical and practical problems of modern society.

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PART I

THE INDIVIDUAL IN HIS SOCIAL ASPECTS

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CHAPTER II

THE PHYSIOLOGICAL BASIS OF HUMAN BEHAVIOR

The Adaptive Function of Behavior. Behavior may be defined as the process of responding to some form of energy in the environment by an activity generally useful to life. The energy, or less exactly the object from which it is derived, is known as the 'stimulus,' while the resulting activity is called the 'response.'[1] The response usually has some characteristic relation to the stimulus which evokes it, such as approaching, attacking, answering, consuming, caressing, or fleeing. The bodily structures and functions operating in behavior are of the same general sort whether the stimulus is furnished by a social or a non-social object. The first step, therefore, in the approach to social behavior is the understanding of those physiological processes involved in behavior in general.

The first stage in the adaptive process is the stimulation of the sense organ, or receptor; the final stage is the response-activity of the muscle or gland, commonly called the 'effector.' The excitation aroused in the receptor proceeds in the form of a nervous impulse along a chain of fiber-shaped nerve cells, called 'neurons,' to the effector. Conduction is therefore the most elementary function of nervous tissue. The chain of neurons traversed by the impulse consists of three portions: (1) the *afferent* (or sensory) branch conveying the excitation from the receptor in toward the central nervous system (brain and spinal cord); (2) the *central* portion lying within the brain or cord and directing the impulse toward the proper outlets; and (3) the *efferent* (or motor) branch transmitting

[1] These terms are interchangeable with the previously used 'stimulation' and 'reaction,' though somewhat more specific.

the impulse outward to the effector.[1] The entire sequence is termed a *reflex arc*, and is to be considered as the functional unit of behavior. Especial significance attaches to the central region of the reflex arc, because it serves not only to connect the afferent and efferent portions of a single arc, but also to coördinate various arcs one with another. The brain and spinal cord have essentially the function of a switchboard. A complex network of millions of central neurons connects functionally each afferent pathway with every efferent and each efferent with every afferent. We receive thousands of different stimuli daily, and are capable of an enormous variety of responses. Yet so remarkable are the central adjustments between our receptors and effectors that, except in unfamiliar situations, a given stimulus almost invariably evokes the biologically correct response. The central adjustments involved in these specific responses are in some cases hereditary, and in others the result of learning through experience. In the former case they are termed *reflexes*, and in the latter, *habits*.

The Receptors and Effectors. In order to obtain a closer view of the behavior mechanism we shall discuss under separate headings the components and properties of the reflex arc and the functions of the central nervous organs. The receptors form the most natural point of departure. To do more than briefly enumerate them would, however, take us too far afield. The most important group of receptors has to do with sensations received from objects at a distance or at least external to the body. They are called the *exteroceptors*. The group includes the senses of vision, hearing, smell, pressure (touch), and external cold, warmth, and pain. The behavior of other persons stimulates us exclusively through the exteroceptive senses. The walls of the internal organs possess sense organs, termed *interoceptors*, whose stimulation gives rise to diffuse, organic, sensory experiences. Interoceptive sensations form the basis of feeling and emotion. A third group of sense organs, called *proprioceptors*, are embedded in the muscles, tendons, joints, and other movable parts of the body, and are stimulated by the movements of those parts. The proprioceptive (also called

[1] The student should memorize these terms, since they will be used continually in the chapters following.

'kinæsthetic') sense is necessary for learning habits and acts of skill. In this group is included the labyrinthine sense, whose receptor lies in the semicircular canals of the inner ear. Its appropriate stimulus is the rotation, movement, or change of equilibrium of the body as a whole. Proprioceptive stimulations evoke responses of movement and posture which are themselves of considerable importance as stimuli to others in social behavior.

The effectors, or organs of response, in which efferent neurons terminate, consist of muscles and glands. The two general functions of muscles are the production of movement and maintenance of posture. Muscles are attached by tendons to bones which they move on the lever principle, with joints as fulcrums, by means of contracting, that is, by shortening, the muscle fibers. The jointed parts of the body have two types of muscle, the flexor and the extensor, the former serving to bend the member at the joint, the latter to straighten it. These two types are said to be *antagonistic*, since in order to move the member one must be relaxed, that is, elongated, while the other is contracted. Other opposed muscle groups exist, such as the muscle lifting the eyelid and the muscle closing it, the muscles opening and closing the mouth, the circular muscles constricting (and lengthening) the intestine and the longitudinal muscle shortening it, and many others. Visceral muscles produce waves of constriction and other movements which carry on the vital processes of circulation, respiration, and digestion. Movements significant in the production of social stimuli are made chiefly by the muscles controlling the organs of speech and by those of facial expression, gesture, and bodily posture.

Glands are small, saccular, secreting organs existing either singly, as sweat and gastric glands, or grouped into complex structures, such as the thyroid, pancreas, and liver. Their secretions aid in the process of digestion and in the elimination of waste matter from the body. The so-called 'ductless glands' provide internal secretions which are absorbed directly into the blood stream. They contain substances (hormones or autacoids) which have a direct, energizing influence upon vital organs and upon bodily growth and development. Internal secretions play an important part in the emotions. The products of the sex glands are powerful

internal stimulants both of sexual development and sex behavior. The secretion of tears is one of the few glandular responses of direct value as a social stimulus.

The Neuron. The nerve cells, or neurons, of which the nervous system is mainly composed, are by their structure adapted to the collection, conduction, and distribution of nervous impulses. Figure 1 shows in diagrammatic form the main features of a neuron. The cell body (*c*), with its nucleus (*n*) and flake-like masses called chromophilic bodies, is the center of the growth and nutrition of the cell. From it a group of branched fibrils, the dendrites, extend in many directions (*d*), and also a single fiber, usually fairly long and straight in its course, called the axone (*ax*). Minute thread-like structures, the neurofibrils, run freely throughout the cell body and its processes. The axones of most neurons are surrounded by a white membrane, the medullary sheath (*m*), which has probably an insulating and a nutritive function. Axones lying outside the brain and cord have as a further outside covering a thin sheath, the neurilemma.

FIGURE 1. DIAGRAM OF A NEURON

d, dendrites; *c*, cell body containing cytoplasm with chromophilic bodies; *n*, nucleus; *ax*, axone; *m*, medullary sheath; *col*, collateral branches of the axone; *t*, terminal arborizations of the axone.

Excitation in the neuron takes place at the ends of the dendrites, the impulse being received either from the specialized cells of a receptor organ, for example, the retina, or from the branched terminations of the axone of another neuron in functional connection with the first. From the dendrites the impulse is conducted through the cell body and out into the axone. The axone terminates in branched form (*t* in

Figure 1), in connection either with the dendrites of another neuron or with a muscle or gland. In afferent neurons leading from a receptor to the spinal cord the dendrite resembles an axone in its length and medullation, the cell body lying near the entrance of the fiber into the cord. In its function of receiving the impulse it is, however, essentially a dendrite. In the brain and spinal cord there are many special types of neurons, varying in the length of their axones, and in the richness of their arborization, according to the function they fulfill.

The nature of the nerve impulse is not fully understood. It will probably be found eventually to be the propagation either of a wave of chemical reaction or of local electrical effects involving changes in the polarization of the cell membrane. The impulse does not flow as a steady stream, but as a rapid and regular succession of separate impulses forming waves of excitation along the fiber. This rhythm may be interpreted to mean that after a given impulse a certain time must elapse for the recuperation of the region of the fiber involved before it is able to transmit another impulse. The failure to respond again without an intervening period for recovery can be demonstrated by giving exceedingly rapid artificial stimulations. The interval necessary for the recovery is called the refractory period. Its length does not exceed .002 of a second. As the nerve cell recovers from the diminished excitability of the refractory period, it very shortly reaches a brief phase of hyper-excitability. If a subsequent stimuluation occurs during this phase, the amplitude of the excitation will be increased above normal. Such variations in excitability partially explain why stimuli having a certain frequency, or occurring at a certain moment, are more effective than others in producing a response, when no outward reason for such inequality of effect can be discovered. The belief is gaining ground that the strength of the nerve impulse does not vary with the intensity of the stimulus, but is constant for a given neuron. The energy of the excitation is latent in the neuron itself, and is expended in its full force or not at all. If this theory is correct, gradations in the vigor of the response must be explained by variations in the *number* of nerve and muscle fibers brought into play.

Reflex Arc Conduction: Properties of the Synapse. Since all reflex arcs comprise two, and most of them more than two neurons, reflex arc conduction involves the passage of the impulse from one cell to another. The finely branched terminations of an axone do not come into actual contact with the dendritic branches of the neuron next in the sequence. A minute space, filled probably by a non-neural membrane, exists between the fibrils of the two neurons. This space is called the *synapse.* The introduction of synapses into neural arcs has a number of important consequences which may be summarized as follows:

1. *Resistance.* The lengthened time required for reflex arc conduction, as compared with simple nerve fiber conduction, indicates that the synaptic gap is a region of increased resistance. 2. *Polarity.* The synapse serves as a kind of valve, allowing the impulse to pass only in one direction; that is, from the axone of one neuron to the dendrites of another. 3. *Correlation.* Synapses, being points of connection, make possible the integration of afferent neurons with a vast number of central and efferent neurons. They also permit the distribution of an impulse to a complex group of efferent pathways, such as those required in keeping one's balance on a bicycle and other acts of skill. 4. *Summation.* By means of the multiplicity of afferent connections afforded, synapses give opportunity for the summing up of minute and individually ineffective impulses from many neurons into an intensity of excitation sufficient to cross the threshold and be drained off into an efferent pathway. Impulses thus supplement and reinforce one another Minute, successive, as well as simultaneous, stimuli are summed up until their total strength is sufficient to bring about a discharge across the synapse. 5. *Variability of Resistance.* The resistance of the synapse is altered by various conditions. Fatigue and sleep seem to increase it. It is also affected in various ways by drugs, and by changes in circulation and oxygen supply. Concurrent stimuli of a powerful character and general nervous excitement appear to lower synaptic resistance. 6. *Facilitation and Habituation.* If a subject squeezes a hand-grip apparatus (dynamometer) at the time when the knee-jerk reflex is being produced by tapping the tendon below the knee, the extent of the knee-jerk will be in-

creased. This temporary effect may be interpreted either as a summation of impulses or a lowering of synaptic resistance in the knee-jerk reflex owing to an accompanying stimulus. The result, however brought about, may be regarded as the facilitation of a response by the agency of the synapse. Synaptic resistance may be decreased in a more permanent fashion by repetition. Each time a certain response is made the resistance to the impulse encountered at the synapse becomes slightly less until a complete habit is formed. 7. *Inhibition.* This is a necessary supplement to facilitation. Antagonistic and irrelevant responses are believed to be inhibited by an increase in their synaptic resistance, so that the response of the moment is given a 'free field.' 8. *Temporal Aspects.* There occur at the synapse in increased form the various phases of excitability, such as refractory phase and hyper-excitability, which occur in the single nerve fiber. Professor Sherrington found that in a dog with the spinal cord severed from the brain, leaving a pure spinal reflex mechanism, the rhythmic movements of scratching could not be elicited at a more rapid rate than four per second, no matter in what rapid succession the stimuli were given. A fourth of a second, in other words, was necessary as a recuperative interval before the reflex arc was capable of functioning again. We may conclude that at their maximum rate reflexes operate in rhythms peculiar to their own refractory periods. The stage of hyper-excitability following recovery no doubt facilitates and emphasizes responses to stimuli given at the most favorable rate.

The Main Subdivisions of the Nervous System. The nervous system as a whole comprises the following subdivisions: (1) the brain; (2) the twelve pairs of cranial nerves arising from the brain, and supplying the sense organs and muscles of the head, face, and internal organs with afferent and efferent fibers; (3) the spinal cord projecting downward from the base of the brain, and protected by the bony vertebral column; (4) the spinal nerves which leave the cord in pairs at regular intervals, and furnish afferent and efferent fibers to the body wall and limbs on either side of the body; and (5) the autonomic system, an extension of the central nervous system which supplies the viscera. The first four of these parts are together called the *cerebro-spinal* system in distinction to the *autonomic.*

A brief sketch of these subdivisions must suffice for our present purpose.

The Spinal Cord and Spinal Nerves. The spinal cord and brain are formed by the development and folding together of the neural groove, a depression extending lengthwise along the back of the

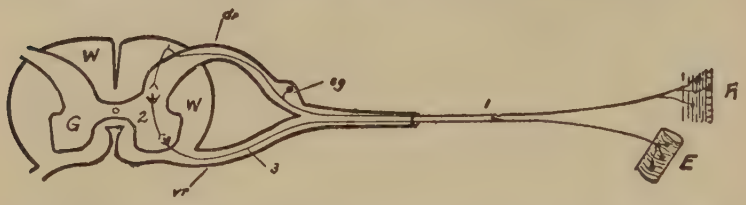

FIGURE 2. DIAGRAM OF A CROSS-SECTION THROUGH THE SPINAL CORD, SHOWING THE ELEMENTS OF A REFLEX ARC INVOLVED IN A SPINAL NERVE

(After Watson.) *W*, white matter; *G*, gray matter; *dr*, dorsal (posterior) root; *vr*, ventral (anterior) root; *1*, afferent neuron; *2*, central or association neuron; *3*, efferent neuron; *sg*, spinal ganglion of the dorsal root containing cell body of the afferent neuron; *R*, receptor — sense organs in the skin; *E*, effector — a striped muscle fiber.

embryo. The closure of the sides of the groove results in a tubular structure, the hollow of which remains as the small central canal of the cord and the ventricles, or cavities, of the brain. A cross-section of the cord, as shown in Figure 2, reveals an H-shaped gray portion (*G*) consisting of cell bodies, dendrites, and unmedullated axone terminations; and a surrounding portion of white matter (*W*) made up of medullated fibers which convey impulses up or down the cord. Each spinal nerve has two roots, a dorsal root (*dr*), through which the afferent neurons (*1*) convey impulses into the posterior horn of the gray matter, and a ventral root (*vr*) from which emerge the axones of the efferent neurons (*3*), their dendrites and cell bodies lying in the anterior or lateral horn of the gray matter.

The spinal cord has two important functions. The first is the conduction of afferent impulses to the brain and other levels of the central nervous system, and of efferent (motor) impulses from the brain downward to control the musculature of the limbs and trunk at various levels. The 'ascending' tracts convey afferent impulses from the end organs of touch, temperature, pain, and the proprioceptive and organic senses to the higher levels of the cord and to the brain. The 'descending' tracts conduct impulses downward

from the brain to various spinal levels. The most important of these, the crossed and uncrossed pyramidal tracts, are composed of axones of neurons whose dendrites lie in the cerebral cortex of the brain (*vide infra*). These fibers all cross eventually to the side opposite to that of their cortical origin, so that the bodily movements on the left side are controlled by the right side of the brain, and those on the right side by the left side of the brain.

The second function of the cord is the correlation within itself of afferent and efferent neural pathways. A nerve impulse may come in from a receptor, for example, in the skin, and pass by one or more association (central) neurons to any efferent neuron at the same level of the cord or at a higher or lower level, and thence out to an effector. The central neuron shown in Figure 2 (*2*) illustrates a simple form of spinal connective. An afferent neuron, moreover, may be connected with a number of efferent neurons producing a group of serviceable coördinated movements without the aid of the higher centers. Spinal reflexes, however, are subject to considerable control and inhibition by impulses from the brain.

The Parts of the Brain. The brain is formed by a development of the cephalic portion of the embryonic neural tube. Beginning at the entrance of the spinal cord the main structures are the medulla, cerebellum, pons, mid-brain, and cerebral hemispheres with their basal structures the thalamus and corpus striatum. In the human brain the cerebral hemispheres are relatively very large. They overlie most of the other portions which are compactly folded beneath them and directed downward. Figure 3 represents the view of the brain which would be seen if it were divided lengthwise between the two hemispheres. It should be studied in connection with the text.

The Medulla. In the short, tapering stem by which the brain passes into the cord, known as the 'medulla oblongata,' the ascending and descending tracts continue to and from the higher brain levels. The main portion of the pyramidal tracts cross in this region. Fibers of certain ascending (sensory) tracts terminate in the medulla making synaptic connections with fibers leading to the cerebellum and the cerebral hemispheres. The lower half of the series of cranial nerves rise from the medulla which thus both re-

ceives impulses from sensory surfaces of the mouth, face, and viscera, and sends motor impulses to these parts. In the medulla these regions are also brought under the control of the higher functions of the brain.

The Cerebellum, Pons, and Mid-brain. The cerebellum is a complex paired structure lying posterior to the upper part of the medulla. Its chief afferent impulses are received from the proprioceptive and labyrinthine sensory endings, and are correlated with efferent impulses which, by controlling the skeletal and trunk muscles, keep the body in equilibrium, and aid movement and coördination by maintaining a slight contraction (tonus) of the muscles. Tonus is observable in a bodily posture alert and prepared for action, which contrasts strongly with the weakness and incoördination resulting from an injury to the cerebellum. The mild afferent flow of proprioceptive impulses is released by special cerebellar, reflex mechanisms in a vigorous efferent discharge. The cerebellum is also in connection with the higher brain centers.

The pons is a transverse band of fibers passing below the medulla and connecting the right and left lobes of the cerebellum. It provides another region for conduction and for the correlation of afferent and efferent fibers in cranial nerves. The mid-brain, which serves as a stalk for the hemispheres, contains important tracts passing to and from the latter. It is also a center for reflexes controlling the eye movements, and for other visual and auditory reflexes.

The Cerebral Hemispheres. The general appearance of the mesial and external surfaces of the cerebral hemispheres is suggested by Figures 3 and 4. Their surface consists of a layer of gray matter about four millimetres thick, called the 'cortex.' The human cortex weighs only about thirteen grams, yet it contains over nine billions of nerve cells. It affords a mechanism for the correlation of impulses of almost inconceivable complexity. The cortex is greatly increased in area by being raised into folds, called 'convolutions,' between which lie fissures, the two most important of which, the fissures of Rolando and Sylvius, are indicated in Figure 4 by the letters *R* and *S*. These fissures aid in dividing the cortex for purely descriptive purposes into regions called 'lobes,'

the most conspicuous of which (indicated in Figure 4) are the frontal, parietal, occipital, and temporal.

In the interior of the hemispheres tracts of medullated fibers, the white matter, run in various directions. They may be classified

FIGURE 3. VERTICAL MEDIAN SECTION OF THE BRAIN

1, medulla; 2, cerebellum, one part shown in section; 3, pons; 4, mid-brain; 5, dotted line shows the approximate position of the left portion of the thalamus at the base of the left hemisphere and touching upon the side wall of the third ventricle; 6, mesial surface of left cerebral hemisphere; 7, corpus callosum; 8, foramen of Monroe, leading into the lateral ventricle within the hemisphere; 9, middle commissure, joining the right and left thalami; *V3*, third ventricle; *V4*, fourth ventricle; *FL*, frontal lobe; *OL*, occipital lobe; *TL*, temporal lobe.

under three heads: (1) the association fibers connecting different areas of the cortex of the same hemisphere, thus serving to correlate their respective functions; (2) the commissural fibers connecting the cortices of the two hemispheres, and comprised mainly in the *corpus callosum*, a broad band of fibers shown in cross-section in Figure 3 (7); and (3) the projection fibers, which extend from the cortex to lower parts of the brain, or down the spinal cord. Projection fibers are termed 'ascending' or 'descending' according to their function. The first pair of cranial nerves (olfactory) enters at the base of the hemispheres.

The Thalamus and Corpus Striatum. The thalamus is a group of nerve centers of paired structure lying at the base of the cerebral hemispheres. Its position is suggested by the dotted line (*5*) in Figure 3. It serves as a way station for all sensory impulses (except the olfactory) arriving through the spinal and cranial nerves. Synaptic connections are here made with ascending projection fibers which spread out to all the lobes of the cortex. The thalamus serves the cortex and is subordinate to it in the following functions: (1) conduction; (2) elaboration of sensory impulses by bringing them together from various afferent channels so that they may affect the cortex in combination; (3) inhibition or blocking of irrelevant sensory stimuli (for example, pain of wounds in the emergency of battle); and (4) providing (in all probability) the neural accompaniment of states of pleasure and displeasure. The corpus striatum is a group of centers similar to the thalamus in possessing functions of sensory elaboration and sub-cortical reflexes. Its neural connection, however, with the cortex is very meager.

The Functions of the Cortex. The cortex is the chief integrating structure of the nervous system. In it areas may be distinguished having microscopical differences of cell structure which seem to signify differences of function. These areas may be grouped under the three headings — motor, sensory, and association. Figure 4 indicates their localization on the external aspect of the left hemisphere. The *motor area*, which lies in the oblique convolution just in front of the fissure of Rolando, contains the dendrites and cell bodies of some eighty thousand pyramidal neurons whose long axones (descending projection fibers) afford an uninterrupted conduction down the spinal cord to various levels of the trunk and limbs. The origin of the fibers controlling the various bodily regions has been localized with some exactness. The *sensory areas* situated in the various lobes, as indicated in Figure 4, contain the axone terminations of the neurons constituting the final stage in the conduction of afferent impulses from the receptors. Impulses from the auditory and optic nerves, as well as from the nerves of smell, taste, and the diffused end organs of touch, temperature, pain, and movement, are thus received in fairly distinct

portions of the cortex. Each sensory area has a focalized region of pure afferent nerve endings, surrounded by a marginal area in which association fibers, communicating with other parts of the cortex, connect synaptically with the afferent terminations. The

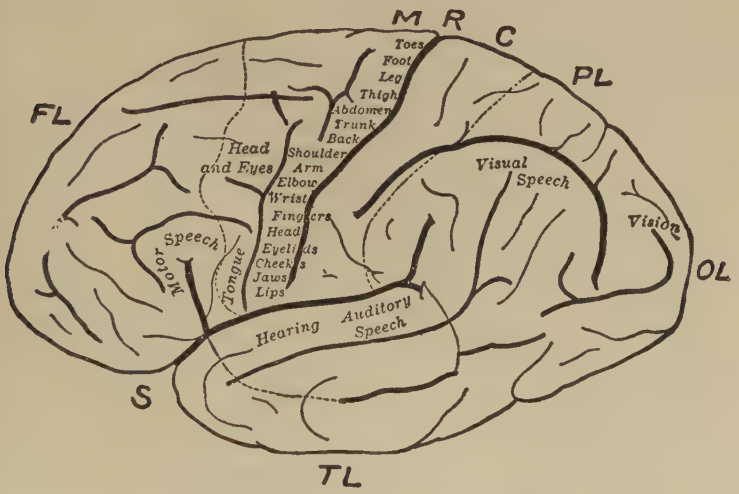

FIGURE 4. LOCALIZATION OF SENSORY AND MOTOR FUNCTIONAL AREAS IN THE LEFT CEREBRAL HEMISPHERE

R is above the fissure of Rolando, in front of which, under *M*, are the motor areas or the various parts of the body. *C* is above the sensory area for kinæsthetic and skin sensibility which extends downward behind the fissure of Rolando. The areas for smell and taste are probably located on the mesial surface of the hemisphere. The areas concerned in audition and vision are named. The part marked "motor speech" is Broca's convolution. *S* is opposite the fissure of Sylvius. *FL*, frontal lobe. *PL*, parietal lobe. *OL*, occipital lobe. *TL*, temporal lobe.

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association areas comprise extensive and complex regions of neurons lying between the areas of localized function, particularly in the anterior frontal, parietal, and lower temporal lobes. To these areas are usually ascribed the associative processes involved in learning and thought. Developing late both in the evolutionary scale and in the development of the baby, they contain correlation mechanisms of a highly plastic and modifiable character.

The areas of the cortex must not be considered either as the seat of some special power or faculty, such as vision, speech, or locomo-

tion; or as the locus of the characteristic consciousness which accompanies their excitation. They are merely crucial points in the reflex arcs in which they lie. Thus the so-called 'visual area' is important solely because it mediates between optical stimulations from all sorts of objects and the variety of responses by which we adjust ourselves to those objects. Our notion of mind will be clearest if we regard it neither as faculties nor states of consciousness, but as an organized system of reflex activities. Recent investigation shows that the localization of cortical functions, as suggested in Figure 4, must be accepted with strict qualifications. The cortex probably acts as a whole rather than by specific portions. Reëducation of habits, moreover, in cases of paralysis through brain lesion proves that one part of the cortex is capable of acquiring the functions formerly possessed by another portion.

The function of cortical areas as the central portion of reflex arcs is illustrated by the defect known as *aphasia*. Damage to the neurons in the association areas bordering on the visual area, while it would leave the patient capable of seeing words, would render him unable to understand or to respond to them in an intelligent way. This condition is known as 'word-blindness.' Word deafness is a similar defect resulting from a severance of the auditory centers from associational connections. Motor aphasia, the inability to write or speak words, though they can be perceived and understood, is due to the cutting off of the motor areas used in speaking and writing from communication with the associative functions.

Cortical Activity in Social Behavior. We may regard those parts of the central nervous system which lie below the cortex as the centers of the primitive reflex activities characteristic of all animals endowed with a nervous system. Such reflexes include respiration, digestive and excretory processes, crying, and simple movements of the appendages in defense and escape. Such reflexes are generally innate, and for their functioning the spinal cord, medulla, cerebellum, mid-brain, and thalamus suffice. The human being, however, has added to this simple repertory a formidable array of activities whose arcs involve and necessitate a cerebral cortex. He has acquired language, spoken and written, and other habits of

skill. He has learned the use of tools, and has acquired sagacity through storing up the effects of past experiences. He has, in short, through the adaptive capacities of the cortex, attained the levels of intelligence and the power of inhibition and control which are requisite for civilized society. The chief contributions of the cortex to social behavior may be summarized as follows: (1) It underlies all solutions of human problems, which are also social problems, and makes possible their preservation in language, customs, institutions, and inventions. (2) It enables each new generation to profit by the experience of others in learning this transmitted lore of civilization. (3) It establishes habits of response in the individual for social as well as for individual ends, inhibiting and modifying primitive self-seeking reflexes into activities which adjust the individual to the social as well as to the non-social environment. Socialized behavior is thus the supreme achievement of the cortex.

The Autonomic Portion of the Nervous System. In considering the general nerve supply it is convenient to divide the body into two regions. These are the *somatic*, which consists of the head, trunk, limbs, and body wall, and the *visceral*, which includes the mouth cavity, œsophagus, stomach, intestines, lungs, heart, blood vessels, bladder, internal sex organs, and glands. The portion of the nervous system which supplies the somatic region is the *cerebro-spinal;* the portion innervating the visceral is known as the *autonomic.* The autonomic is not, as its name implies, an independent system. There are no true reflexes which do not have their central portion in the cerebro-spinal axis. The autonomic system is essentially a visceral extension of the peripheral (outlying) portions of the arc. A clearer notion of the cerebro-spinal and autonomic systems may be gained if we compare their respective structure and functions. The cerebro-spinal system in the stricter sense receives its stimulations from the receptors on the surface of the body and from the proprioceptive nerve endings. It controls skeletal and trunk muscles composed of bundles of fibers exhibiting under the miscroscope a cross-striped appearance. Its peripheral nerve fibers are medullated; and their chief function is to produce a response of movement in some part of the body, a type of muscular activity known as a 'phasic contraction.' The autonomic system has its

receptors chiefly in the muscular and mucous lining of the internal organs where they are stimulated by the positions, movements, and other changes accompanying the function of these organs. The efferent autonomic fibers innervate the layers of smooth, or unstriped, muscle cells in the viscera. They control also the secretory activities of glands, including the sweat glands, as well as changes in diameter of the blood vessels and the erection of the hairs. Many autonomic fibers are unmedullated. The type of response they make in the smooth muscle is one largely of change or maintenance of muscular tension (tonus) in an organ. The pressure which an internal organ, for example, the bladder, exerts upon its contents is controlled by autonomic fibers. It is a reaction of posture rather than of movement, and is known as a *tonic* contraction. The central portions of the autonomic reflexes lie, as previously stated, in the brain and spinal cord.

There are three divisions of the autonomic which should be carefully distinguished. The first is the *cranial* division. It arises from five of the paired cranial nerves, and supplies not only certain portions of the head, such as the lens muscles and iris of the eye, and the salivary glands, but also the digestive system, bronchial tubes, and heart (see vagus nerve, Figure 5, *X*). In general there are interposed in the course of the efferent autonomic fibers, between their emergence from the cerebro-spinal axis and the organs they supply, certain masses of nerve centers (ganglia) lying either somewhat centrally, or (as in the case of the cranial and sacral divisions) in proximity to the organs themselves. The cranial division protects and preserves the organism by such functions as pupillary contraction and the augmenting of the glandular and muscular activities of digestion.

The second division is the *sympathetic*, whose distribution is illustrated in Figure 5. Its fibers emerge from the spinal nerves in the thoracic and lumbar regions (T_I—T_{XII}, L_I—L_V), and proceed to small segmentally arranged ganglion bodies which are vertically connected into ganglionic chains, one on either side and in front of the vertebral column. In some cases, for example, in the splanchnic nerves, the fibers run to large 'collateral' ganglia of the sympathetic, not lying in the ganglionic chain itself. From these

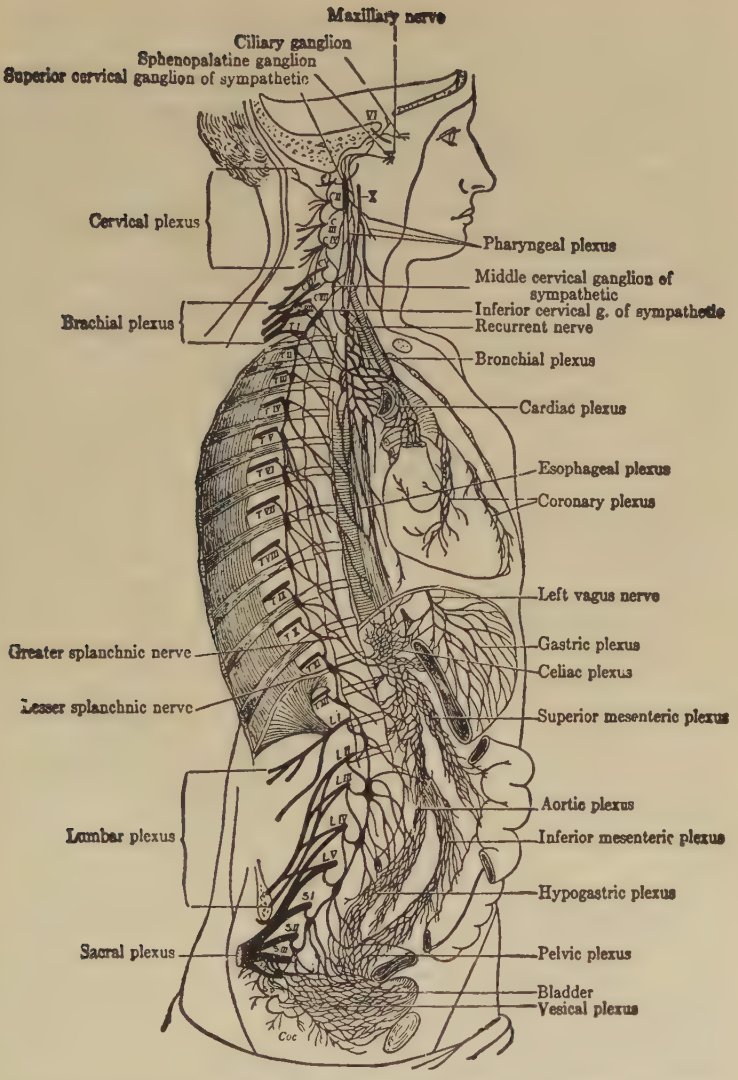

FIGURE 5. THE SYMPATHETIC DIVISION OF THE AUTONOMIC NERVOUS SYSTEM, SHOWING THE RIGHT SYMPATHETIC GANGLION CHAIN AND ITS CONNECTIONS WITH THE SPINAL NERVES AND THE VISCERAL PLEXUSES

For names of the various spinal nerves, see text. *X*, the vagus nerve, is a part of the cranial division of the autonomic. The three divisions of the autonomic are not clearly distinguished in this figure.

(From Herrick, after Schwalbe's *Neurology*, by permission of the publishers, Messrs. W. B. Saunders Company, Philadelphia.)

ganglia new fibers arise and run to the viscera, being distributed there in a very diffuse manner by plexuses (see Figure 5). Other fibers originating in the ganglionic chain return to the spinal nerves and are distributed to the hairs, sweat glands, and blood vessels of the outer surface of the body. The sympathetic division also supplies fibers, through ganglia in the head region, to the structures innervated by the cranial division. The sympathetic

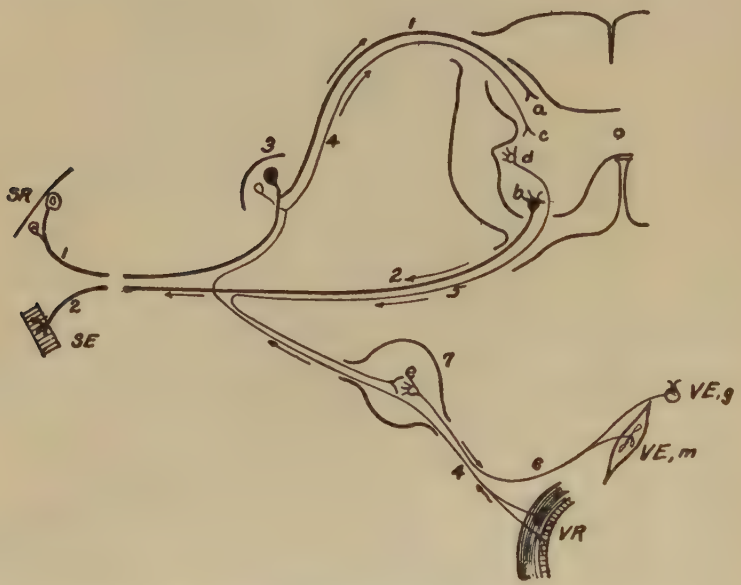

FIGURE 6. RELATIONS OF NEURONS IN THE CEREBRO-SPINAL AND AUTONOMIC SYSTEMS

Somatic (cerebro-spinal) neurons shown in heavy lines, visceral (autonomic) neurons in light lines. 1, *afferent somatic* neuron, 2, *efferent somatic* neuron; 3, spinal ganglion; 4, *afferent visceral* neuron of the sympathetic; 5, *efferent visceral* neuron (pre-ganglionic); 6, *efferent visceral* neuron (post-ganglionic); 7, ganglion of the sympathetic; *SR*, somatic receptor (sense organs in skin); *VR*, visceral receptor (sense organs in viscera); *SE*, somatic effector (striped muscle fiber); *VE, m*, visceral effector (smooth muscle fiber), *VE, g*, visceral effector (gland).

fibers accelerate the heartbeat, constrict the blood vessels, check the contraction of the smooth muscle involved in digestion, and stop the secretion of digestive juices. Their functions are of considerable importance in emotional excitement.

The general scheme for all autonomic innervation is as follows: An *efferent* autonomic, or 'visceral,' fiber leaves the cord in the ventral root of a spinal nerve, or leaves the brain in a cranial nerve, and proceeds to a ganglion. This fiber is called a *pre-ganglionic* neuron. Within the ganglion synaptic connection is made with a non-medullated, *post-ganglionic* fiber which relays the impulse to the visceral muscle or gland. The *afferent* visceral fiber is not broken by synapses in the ganglion body, but proceeds directly from the receptors through the dorsal root of the spinal nerve into the gray matter of the cord (through a cranial nerve to the brain in case of the cranial division). Figure 6 illustrates these connections.

The third division, the *sacral*, arises like the cranial directly from the cerebro-spinal axis, but at the lower end of that axis. Fibers from the sacral nerves (Figure 5, *SII*, *III*, and *IV*) go directly to ganglia which supply the organs of emission — the bladder, rectum, and sexual organs. Those organs are also supplied with fibers from the sympathetic. The relations of the three divisions of the autonomic are shown diagrammatically in Figure 10 (Chapter IV).

The cranial and sacral divisions of the autonomic are often spoken of together as the *cranio-sacral* division. Between the functions of the sympathetic and the cranio-sacral there exists a distinct antagonism. They operate in the same organs, but with opposing reactions. For example, the sympathetic dilates the pupil, the cranial constricts it; the sympathetic inhibits digestive and sexual activities, the cranio-sacral augments them; the sympathetic accelerates the heartbeat, the cranial retards it, and so on. In addition to the three divisions of the autonomic already described there lie embedded in the walls of the heart and alimentary canal net-like plexuses of nervous tissue. These 'local plexuses' are truly autonomous. They actuate the rhythmic contractions of the viscera independently of the cerebro-spinal system which, through the three divisions of the autonomic, serves merely to regulate these functions.

The Relation of the Autonomic to the Cerebro-Spinal System. If we examine Figure 6, we shall see that the central nervous system affords a common ground for interconnection between the

cerebro-spinal reflexes of the somatic region and the autonomic reflexes of the visceral region. Thus if we imagine a central neuron connecting the various neuron endings in the cord (Figure 6), the four following possibilities arise:

1) The connection of *a* and *b* establishes a somatic-sensory, somatic-motor arc.
2) The connection of *a* and *d* establishes a somatic-sensory, visceral-motor arc.
3) The connection of *c* and *b* establishes a visceral-sensory, somatic-motor arc.
4) The connection of *c* and *d* establishes a visceral-sensory, visceral-motor arc.

The receptor and afferent process, in other words, may be either somatic or visceral, and the efferent process and effector may be either somatic or visceral. Figure 7 illustrates the four possibilities in schematic form, and will be convenient to keep in mind as a brief summary of the behavior mechanism.

There is a tendency among those who write about the physiology of human behavior to slight the autonomic functions. From the standpoint of evolution the autonomic system is older and more fundamental than the cerebro-spinal. The popular notion that the function of the stomach and other viscera is to sustain the activities of the limbs and the æsthetic and intellectual life of the 'higher senses,' substitutes man's conception for Nature's. In the light of both racial and individual development it is more correct to say that the distance receptors, the responses of locomotion, and the intellectual processes of the cortex themselves acquire their primary significance as servants of the 'inner man.' Later they reach a

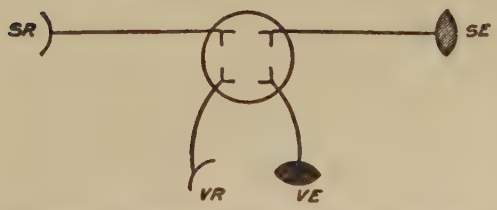

FIGURE 7. SCHEME TO SUGGEST THE INTERRELATIONS OF THE CEREBRO-SPINAL AND AUTONOMIC SYSTEMS

SR, somatic receptor; *SE*, somatic effector; *VR*, visceral receptor; *VE*, visceral effector. The circle indicates the brain or spinal cord. *SR* may be connected with either *SE* or *VE*. *VR* may be connected with either *SE* or *VE*.

degree of complexity which leads us to regard them as more fundamental than the visceral activities. As one writer humorously remarks, they become "the tail that wags the dog." But the autonomic functions, like still waters, run deep through life. Hunger and sexual desire, the two supreme drives of the human race, originate in autonomic receptors; while the effector side of autonomic behavior is at the base of feeling, emotion, and personality.

Compound Reflexes in Behavior. Adaptive behavior involves the extensive modification of simple innate reflexes by joining them at the synapse with other reflexes, a process which we have previously designated as correlation. A number of possibilities in the correlation of reflexes were mentioned in connection with the properties of the synapse. We have now to consider more specifically the important types of combined reflexes.

Allied and Antagonistic Reflexes. Let us suppose that one afferent neuron is in functional connection with more than one efferent, as indicated in Figure 8 (1). (Although only two efferent fibers are shown in the drawing, there may actually be many.) There are the two following possibilities: (1) The two or more effector activities may be such that they can go on simultaneously. This will be true if they do not involve antagonistic muscle groups (see p. 19). As the runner becomes 'set' on the mark in response to the stimulus 'ready,' all his muscles are being prepared for one concerted movement. When we greet a friend after long absence, not only the muscles employed in the handshake, but our entire effector system, takes part to some degree in the cordial response. This type of reaction is called an *allied* reflex. (2) The other possibility is that the effector processes may be opposed to one another. The arm cannot be both flexed and extended at the same time. A timid child pursued and tormented by an older one will sometimes turn and fight desperately, thus substituting for flight the opposed responses of attack. In this case there appears to be an inhibition at the synapse of one of the efferent pathways while the other is being employed. Reflexes of this sort are said to be mutually *antagonistic.*

Allied and antagonistic reflexes occur in the reverse situation; that is, where two or more afferent neurons connect with one effer-

ent, as indicated in Figure 8 (2). If the two sensory elements are habitually associated with the same response, they will readily discharge into the common effector. An allied reflex of this sort, which is really a kind of synaptic summation, is illustrated by one's behavior in a congregation where doubt exists as to the propriety

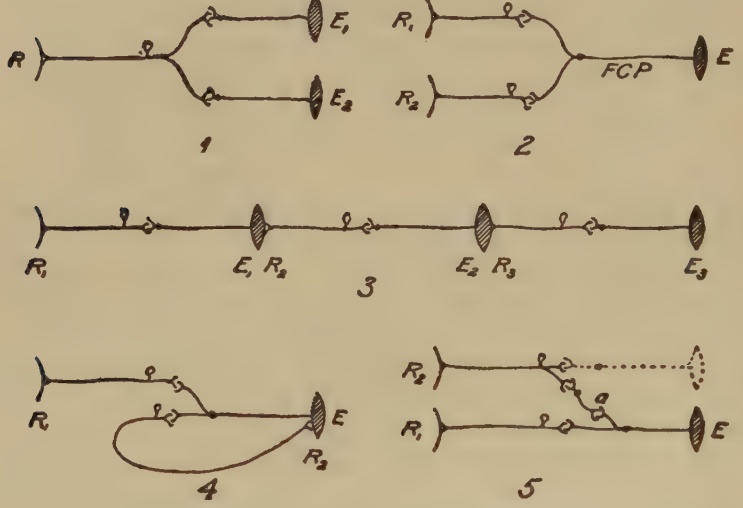

FIGURE 8. TYPES OF COMPOUND REFLEXES

1, allied or antagonistic reflex; 2, the same; 3, chain reflex; 4, circular reflex; 5, conditioned reflex; *R*, receptor; *E*, effector; *FCP*, final common path; *a*, association neuron. Cell bodies of afferent neurons are shown in outline, those of efferent neurons in black. For the sake of simplicity the central neurons of the arcs are omitted.

(1, 2, and 3 are adapted from Herrick, after Schwalbe's *Neurology*, by permission of the publishers, Messrs. W. B. Saunders Company, Philadelphia.)

of rising on a certain occasion. The first of those to rise about one have little effect upon him, but as the numbers increase, rising becomes irresistible and automatic. When, on the other hand, the two afferent processes have paths of lowered resistance into different effectors whose responses are opposed, there will result a period of indecision and delay until one reflex gains the ascendancy and the other is inhibited. The efferent outlet finally chosen is called the *final common path*. The behavior of two rustic characters in a well-known play illustrates this sort of antagonistic reflex in the

social sphere. One had only to mention "checkers," a game in which the two were bitter rivals, and hostilities would ensue. Again, if one suggested their long comradeship and mutual sharing of joys and sorrows, they would fall into each other's arms. When the two stimuli were presented in close succession, their faces depicted a period of struggle, as precarious as it was amusing, before the final common path was determined.

The Chain Reflex. Reflexes may be joined into functional patterns at the end as well as in the middle of their course. It often happens in a series of responses that one movement affords a kinæsthetic or cutaneous stimulation which evokes the next movement. In walking, the pressure on the foot and the strain on muscles, tendons, and joints resulting from one step become the stimuli for the response of taking the next step. Swallowing is a series of constrictions of the œsophagus proceeding downward by the principle of the chain reflex. Figure 8 (3) illustrates this type of reflex connection.

The Circular Reflex. The circular reflex is a special type of chain reflex in which the afferent impulse, originating from the effector response (Figure 8, 4, R_2), passes back to the brain or cord and out again through the same efferent pathway previously used. The effect of this circuit is to maintain and reinforce, or to repeat, the muscular response. The holding of an object in the closed hand, and the repetition of syllables in the 'talk' of the infant, probably involve this type of compound reflex. Since the response takes a rhythmic form, such synaptic conditions as length of refractory phase, hyper-excitability, and the like, are no doubt significant in its operation. The circular reflex is an indispensable aid in the infant's acquisition of speech.

The Conditioned Reflex. The most important of all the modifications of reflexes is the process by which an afferent neural pathway acquires new efferent outlets. A simple laboratory experiment will illustrate. The subject is seated in front of a small electrically released hammer which, by dropping close to the eye, causes him to wink. This is an original, infantile, and *unconditioned* reflex. A buzzer is now sounded just as, or just before, the hammer drops. The subject, of course, winks as formerly. After a number of such

trials with combined stimuli, the buzzer is sounded without the release of the hammer. The subject now responds by winking to the sound of the buzzer alone. The response has been transferred or rather extended, from the biologically adequate stimulus of an object threatening the eye, to a previously indifferent auditory stimulus. The wink reflex may thus be said to be *conditioned* by the sound of the buzzer. The scheme of the conditioned reflex is shown in Figure 8 (5). R_1 represents the stimulation by the original stimulus, the hammer, R_2 the stimulation by the 'conditioning stimulus,' the buzzer, and E the eye-wink response. Through repeated joint presentation of the stimuli a path of lowered resistance is formed in some association fiber or fibers (a) already existing as a potential connection between the two reflexes.

No single law of human or animal behavior is of more far-reaching significance than that of the conditioned reflex. Half of the process of education consists of transferring appropriate responses to new and more finely discriminated stimuli. In the diagram the original response to the conditioning stimulus (for example, the buzzer) is shown in dotted lines because it is not relevant to the illustration used. In certain cases, however, the responses both to the original and conditioning stimuli are important because antagonistic; the transfer of the response from the first stimulus to the second must inhibit the original response to the latter. If, for example, a child is whipped for stealing apples, the subsequent sight of the fruit over the garden wall will of itself evoke the response of fear and avoidance aroused by the whipping with which it (the fruit) was recently associated. The original approaching response to the sight of the fruit, being antagonistic to the conditioned response, will be inhibited. We shall later observe other instances of the conditioning of original reactions through social stimuli and for the purposes of society. Recent experiments have shown that under conditions of emotional excitement, produced by autonomic responses to the stimuli employed, conditioned reflexes are formed with unusual facility. This fact is commonly recognized in the importance ascribed to such autonomically controlled factors as incentive, interest, instinctive desire, and attention. They are rightly regarded as indispensable conditions of the learning process.

The Use of the Term 'Reflex.' It should be understood that in each of the examples given above, the reaction involves not one reflex, but many. The mechanisms have been described and represented in the figures as single reflex arcs solely for the sake of clearness. Moreover, in many instances the complexities of correlation, the number of neurons involved, and the time required for the reaction, are so great that the term 'reflex,' which denotes strictly only simple innate coördinations, is not applicable. This is particularly true of conditioned reactions. It would be more exact in some cases to avoid using the word 'reflex,' and speak of antagonistic, allied, chain, and conditioned *responses*. This terminology will be employed wherever appropriate in the following chapters.

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CHAPTER III

FUNDAMENTAL ACTIVITIES — INHERITED AND LEARNED

Instinct, Maturation, and Habit

The Origin of Fundamental Activities. Having traced in outline the mechanism employed in human behavior, there now lies before us the problem of describing and explaining, in the terms of that mechanism, the characteristic activities of life. There are certain broad and unvarying types of response, serving as imperative forces in the individual and social life of man, with which the analysis must begin. We must seek, for example, to understand why the young man learns a trade, marries, and settles down to domestic life; why the scholar and the statesman toil unceasingly for fame; why we become angry at a man who insults us or who abuses his horse; why we shrink from the sight of blood and hurry breathlessly through strange, dark places; why the boy loves to chase a squirrel; why the magnate by a shrewd deal 'corners' an industry; why the laborer participates in a strike riot; and why a mother will drudge and slave that her son may go to college. Actions of this sort challenge our neurological formulæ. They not only lead back to something original and fundamental in human nature, but also point to a superstructure of attainment by hand and brain. They measure both the height and the depth of man.

In behavior of this type two classes of activities can be recognized, those which have been *inherited* and those which have been *learned* by the individual. It is difficult in a given case clearly to distinguish between these two; and there is a wide difference of opinion as to their relative importance. Those who believe strongly in the inherited factors maintain that the mother has an inborn tendency to love and protect her offspring, or at least to protect small, defenseless creatures; that through certain neural dispositions, or coördinations of reflex arcs, laid down by heredity, we respond to strange and dangerous situations by avoidance, to small moving objects such as game by pursuit, to a chosen member

of the opposite sex by lover-like behavior, to the sight of suffering by sympathy, to the thwarting of our endeavors by fighting, and to the sight of valued objects by seizing, 'cornering,' and hoarding. Such innate neural coördinations are termed *instincts*. They are more highly integrated than simple innate reflexes such as yawning, breathing, and crying; and they serve the purpose, implanted in the race through evolution, of adapting the individual to the more complex and significant features of the environment.

The explanation advanced by those who favor the hypothesis of learning restricts the rôle of inheritance to far simpler terms, and interprets these complex and purposeful integrations of reflexes as *habits*. Maternal behavior, for example, may be ascribed to an association formed between the child as a stimulus and the pleasant organic responses and sentiments connected with the husband, the home life, the plans for the future, the fondling and nursing of the infant, and the attitude of society toward the maternal relation. Again, our avoidance of a dangerous object may be due to a reaction of withdrawing from injury which has become associated by experience with the sight of the object which inflicts such injury. Learning would be, according to this view, a more acceptable explanation than that of an 'instinct of flight.' Flight, moreover, is possible only after the acquisition of the habits of walking and running, just as the shrewd deal of the financier is possible only because of his acquired knowledge of the market and the laws of exchange.

Instinct and habit are therefore clearly reciprocal in explanatory value. That which is ascribed to one must be denied the other; hence it is necessary to establish, in general terms at least, some tentative demarcation. Our aim in the present chapter will be to determine: (1) what instinctive coördinations of reflexes really exist; (2) how, using these coördinations as a basis, the individual builds up systems of habit and intelligent behavior; and (3) the significance of the social environment in this process of modification.

The Criteria of Instinct. We must first examine the grounds upon which fundamental activities are alleged to be instinctive. One of these is universality of occurrence among the members of

the species. This criterion is open to serious objection inasmuch as the young of the species are universally submitted to the same class of environmental influences. Even among birds certain traits formerly thought to be instinctive have been discovered to arise from the 'social tradition' taught by the behavior of the parents to each generation. In order to prove a reaction to be innate, we must establish the fact that in the process of attaining its present development no necessary part has been played by learning through experience. If the response appeared at the moment of birth, its innate character (barring a limited amount of intra-uterine habit formation) would be incontestable. Birth, however, is but one event in a long period of development which begins at conception and extends far into active life. It is therefore theoretically admissible that traits of behavior which make their first appearance during infancy, childhood, or youth may result from the 'ripening' or maturing of truly innate coördinations of reflexes, and not from experience. We may call this view the *maturation hypothesis*. An experiment has been performed in which several swallows were placed, as soon as hatched, in a cage so small as to prevent attempts at flight. At the age at which swallows are usually able to fly, they were liberated. Some of them at once flew off quite successfully.[1] Although not altogether convincing in certain respects, this experiment illustrates the possibilities involved in maturation without the aid of use. Since practically all the asserted instincts (such as flight, attack, parental and sex behavior, hunting, hoarding, constructing, and the like) first appear long after birth, it is obvious that the instinct theory rests its case upon the hypothesis of maturation. We are led, therefore, to a consideration of the evidence for and against this hypothesis.

Post-Natal Development of Structure. No one would consider the structures which underlie behavior to be fully formed in the newborn infant. There is no response to sound for the first few days. Color vision is still longer deferred. The protective wink reflex, laughing, and other facial expressions require weeks for development. Voluntary control of the bladder is not attained until after the first year. Development of this nature, however,

[1] Spolding, D. A. (See references cited at the end of this chapter.)

pertains largely to the terminal organs, the receptors and effectors, such as the eye, the ear, and the facial and sphincter muscles. In themselves these tardily appearing reactions afford little definite evidence regarding maturation at the synapses. The receptors and effectors operating in sexual activities provide a striking example of late development in terminal structures.

There is, however, an unquestioned developmental growth in the central nervous system, subsequent to birth. Considerable areas of the brain (for example, the association centers) are in the newborn infant histologically incomplete. The rich arborizations of axone and dendrite are undeveloped; and a vast number of synaptic connections of the future are not yet structurally possible. The progress which follows this infantile condition is to be regarded, however, as a general, rather than a specific, ripening of neuronic connections. There is nothing to indicate a maturing of special paths of lowered synaptic resistance between receptor and effector. It is a process of growth which makes all types of reaction structurally possible, but favors the establishment of none more than others.

Experimental evidence bearing on this point is provided by a study of the pecking response of chicks.[1] The attempts of newly hatched chicks to seize grains of wheat are, on the first day after hatching, very awkward and ineffective, an average of only fifteen per cent of 'perfect trials' (that is, attempts consummated by swallowing) being achieved. On the fifth day of practice, however, the perfect trials were found to average seventy-two per cent, and on the fifteenth day, eighty-four per cent. It was decided to investigate whether this rapid increase in efficiency was due to the maturation of a 'pecking instinct' or to the perfection of a habit through practice. The method used was to start the pecking experiments with groups of chicks of later ages and compare the results with those obtained from the group beginning their attempts on the second day of active life. One group was given its first trials on the fourth day, one group on the fifth day, and one on the sixth day. Between their hatching and the day their pecking trials began the chicks were kept in a dark place and given no opportunity

[1] Shepard, J. F., and Breed, F. S. (See reference cited at the end of this chapter.)

to peck. The average accomplishments of the groups for each day's trials are shown by the curves in Figure 9. The horizontal axis indicates the day of life, and the vertical axis the number of perfect trials made out of the total of fifty trials given each day. It will be seen that the improvement curves of the three groups of delayed chicks have two significant features. (1) In the first fifty trials

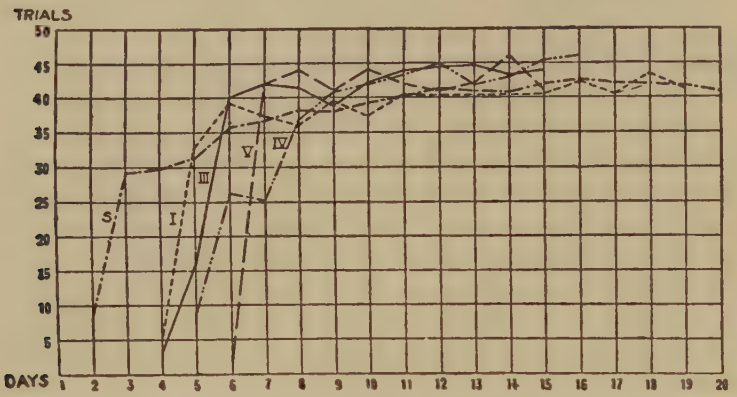

FIGURE 9. CURVES SHOWING THE EFFECT OF ARTIFICIAL DELAY UPON THE DEVELOPMENT OF THE PECKING RESPONSE OF CHICKS

S, standard curve showing average daily improvement of chicks beginning their practice on the second day of life. I, III, IV, V, curves of average improvement of groups of chicks beginning their practice on the fourth, fifth, and sixth days, respectively (I and III beginning on the same day). The height of the curve indicates the number of successful peckings out of 50 attempted for each day.

(After Breed and Shepard in *The Journal of Animal Behavior*, vol. III, page 278, by permission of the publishers, Messrs. Henry Holt and Company, New York.)

(first day's practice) the older birds were unable to score a greater number of perfect responses than were the birds who began to peck the day after hatching. In some cases the delayed groups were actually less effective in the first trials than the undelayed. (2) There was a much more rapid improvement among the delayed groups, so that in a few days they overtook and even surpassed the progress made by the chicks who had practiced from the start.

On the one hand, the results of this experiment discredit, for the activity concerned, the theory of the specific maturation of an instinct, and show the necessity of practice as in all habit formation. The low beginning and improvement of the delayed groups show

that in their case, as in the case of the undelayed, the response of pecking had to be *learned*. On the other hand, the capacity of the more mature chicks for more rapid learning indicates that they were able to profit in forming the pecking habit by a greater *general development* of neurones, synapses, receptors, and effectors than existed in the birds one day of age.[1] The conclusions drawn from this experiment are no doubt pertinent to the development of the human being. It is generally futile to attempt instructing a child to talk or to walk before the age of twelve months. Not long after that time, however, there begins a surprising progress in the acquisition not only of locomotion and speech, but also of a more dextrous manipulation (for example, self-feeding), of control of the emissive functions, and of general comprehension of objects and situations. Curves of learning could be plotted for these activities quite comparable to the rapidly rising curves of the 'matured' chicks. Synchronous development along these many lines is certainly more intelligible if conceived as a diversity of habits made possible of acquisition by *general* neuronic development, than if regarded as a number of *specific*, innate, neural coördinations which all happen to mature at about the same time.

Maturation *versus* Learning in the Analysis of an Activity. General assumptions aside, if we observe the progress of the infant in any particular activity, we shall probably find that it develops by a coördination of simpler part movements in a way that suggests learning. Such partial activities, for example, in walking (which is often alleged to be an instinct) include kicking, pushing with the feet, holding the back erect, crawling, acquiring tonus of trunk and limbs in standing, stepping with support, and standing alone. These part responses are themselves made up of crude innate reflexes perfected and rendered serviceable by practice, and they appear in sequence throughout the first twelve to fifteen months. Suddenly one day the baby affords its parents a delightful surprise by taking a half-dozen steps all alone. In some way an integration of the component movements is accomplished. Far from being an un-

[1] This interpretation differs from that offered by Breed and Shepard. A good descriptive and critical discussion may be found in Watson's *Behavior, an Introduction to Comparative Psychology*, pp. 138–41 and footnote.

usual process, however, this sudden integration is a familiar experience in all complex forms of learning. In learning to swim, pole-vault, ride a bicycle, and play the jew's-harp, we spend considerable time in practicing the stroke, the position of the hands and feet, and other details, without being able to do the thing itself. Then we suddenly succeed in integrating these components and mastering the whole act in one or two trials; and the rest is merely a matter of perfecting the performance. This process is popularly known as "getting the knack" of a thing. Learning to walk seems to be closely analogous to learning these other feats of skill. In such a case we should no more speak of the maturation of the instinct to walk than of the maturation of a bicycling or a jew's-harping instinct.

Conclusions: The Need of Genetic Study in the Determination of Instinct. Although the foregoing observations by no means prove that no genuine case of maturation of inherited reflex patterns exists, they show that such an assumption rests upon a speculative basis. Post-natal development may be interpreted as a general growth process facilitating the formation of habits, rather than a process of maturation of instincts. Fundamental and early responses of a complex type, moreover, lend themselves to plausible explanation by the laws of learning. In order to merit substitution for learning and habit as an explanation of the tardy appearance of alleged instinctive activities, the maturation hypothesis should be at least as well founded on fact as the process of habit formation. This it clearly is not.[1]

Our efforts thus far to establish a reliable criterion of the innate and acquired factors have been without avail. The reason is not far to seek. We have begun by considering the activities in question in their fully fledged state. This is the wrong end of the proc-

[1] This assertion refers only to man. The lower animals, particularly the insects, have well-defined maturations of innate responses. The functions of the effectors are, however, far more limited and specific in the lower animals than in man. When we consider the simple and unvarying uses to which the jaws of the ant, the claws of the beetle, the fin of the fish, and wing of the bird are put in comparison with the complex and thousand-fold activities of the human hand, it becomes clear that the notion of innate responses is more appropriate to sub-human forms than to mankind. The more highly variable action system of man and the higher vertebrates has its neural basis in the cortex, whose pathways are determined by learning rather than by inheritance.

ess. By the very intent to study that which we call an 'instinct,' we immediately cut off from our view the life history which lies behind that activity, and which affords the only means of disentangling the component strands of heredity and environmental influence. We must begin our study at the threshold of life, with only the equipment possessed by the newborn infant, and seek in this beginning and the events which follow the origin of the fundamental activities.

The Prepotent Reflexes and Learning

Reflexes involved in Fundamental Activities. The behavior repertory of the newborn infant seems at first acquaintance a random, poorly coördinated, and unadapted affair. Yet under careful observation there will be recognized certain adaptive responses of profound significance in directing future development. In order to appreciate these reactions we may recall the experiments of Professor Sherrington upon the 'spinal dog,' an animal whose nervous mechanism had been reduced to spinal reflexes by severing the cord at the base of the brain.[1] To a pin-prick upon the bottom of the foot this simple nervous system responded by jerking the foot upward away from the stimulus. This adaptive reaction, moreover, prevailed when other stimuli were competing with the injury to the foot for the determination of the final common path. Both the scratch reflex, elicited ordinarily by tickling the shoulder, and the reflexes maintaining the posture of the limbs, were inhibited in favor of the withdrawing response. Nocuous, or harmful objects, therefore, coming into contact with the receptors ('noci-ceptive' or pain end organs) of the body, evoke reflexes which are imperative in their action, protective or adaptive in their effect, and prepotent in their ascendance over other stimuli in controlling the final common path. There are also prepotent reflexes, such as sex responses, which are accompanied by conscious pleasure rather than pain. In the male frog during the breeding season the response of clasping the female is so powerful that the transection of his spinal cord above and below the shoulders fails to loosen his embrace.

[1] *The Integrative Action of the Nervous System*, pp. 226–34.

The human being has inherited a number of prepotent reflexes which are fundamental not only in their original potency, but in the control which they exert over habit formation throughout life. Ultimately, as well as genetically, they are prepotent. Most of these reflexes are functional at birth; one, the sensitive zone reflex, appears in early infancy; while the sex activities alone require a considerable period for the development of the structures concerned. We may recognize six important classes of human prepotent reflexes:

Starting and Withdrawing
Rejecting
Struggling
Hunger Reactions
Sensitive Zone Reactions
Sex Reactions

It should be emphasized that each of these activities comprises, not a single reflex, but a large group of effector movements occurring upon the application of the appropriate stimulus. In the following discussion the singular form will be used solely for convenience. The reflexes of any prepotent group include responses in the visceral as well as the somatic, or skeletal, effectors. We shall be concerned at present only with the somatic portion of the response, that which deals with the external, environmental situation. The visceral effects, which are the basis of emotion, will be discussed in the next chapter. In some of the prepotent reflexes the afferent (sensory) terminals are somatic, as in the case of withdrawing; in some they are visceral, as in the hunger and sex reactions.

I. Starting and Withdrawing. The response of *starting* may be produced in the newborn infant by removal of support, loud scunds, a sudden tug or push when drowsy, and immersion in water. Jerking movements of the head, arms, and legs, changes in respiration, puckering of the mouth, and crying result from these stimulations.[1] There is some doubt as to the time of appearance

[1] For these facts of infant behavior and others discussed in this chapter the writer is indebted to the researches of Dr. J. B. Watson. See his *Psychology from the Standpoint of a Behaviorist*, pp. 199–236, 236–49; also his article, "Studies in Infant Psychology," *Scientific Monthly*, December, 1921.

of the *withdrawing* reflex, such as that of retracting the hand or foot from a harmful stimulus. It probably exists in a crude form at a very early age if not, in fact, at birth. In parts less readily withdrawn a nocuous stimulus produces a restless random movement which is kept up until the body is removed from the harmful contact. With practice these simple mechanisms soon develop into complex and effective habits (sometimes called 'instincts') of flight and escape. Turning the head so that the nostrils will not be buried in the pillow, and blinking at objects threatening the face (at about one hundred days of age) are examples of special withdrawing responses. The latter is connected in older children with retreating movements of the head and body.

The withdrawing reflex as congenitally exhibited is, like all prepotent reflexes, remarkable in two ways: (1) It is evoked only by stimulation of an extremely simple type. (2) It is crude in the manner in which it is carried out. Subsequent development then must proceed along these two lines, the afferent and the efferent. We shall discuss them in order.

1. The Afferent Modifications. The baby under a year of age does not withdraw from the sight of fire or the dark, or from animals which would arouse fear in an older child.[1] Complex stimuli, or situations requiring experience in order to convey a meaning of danger to the individual, have no congenital stimulating value, but only simple stimuli of unusual intensity (for example, loud sounds), and suddenness, or piercing, burning, and other destructive agents. Thus the degree of energy of the stimulus and the powerful effect of nocuous stimulation upon neuron and synapse are the hereditary determiners of the withdrawing reaction — not the awareness of danger nor the inborn cognition of an hereditary peril.[2] The first

[1] Watson: *loc. cit.*, pp. 199–206. Similar observations have been made regarding the young of certain birds and mammals.

[2] This statement is in opposition to the older doctrine of instincts as formulated by Professor McDougall and others. To substantiate the inheritance of adaptive responses to complex and meaningful stimuli would require the acceptance of a central process, or 'cognitive disposition,' corresponding to a realization of danger, which is transmitted by heredity. Two improbable assumptions are involved in this. On the conscious side the discarded doctrine of innate ideas would have to be reinstated as valid; and on the neural side there would be required an exceedingly complex cortical maturation. We have already found reason to doubt the existence of maturation in far simpler neural correlations than these. Professor McDougall

problem, therefore, in the development of the reflex is to understand the process by which other stimuli, and stimuli more complex than the original, acquire the power of evoking the response. The theory of maturation we have found to be insufficiently established; environmental factors and learning through experience must therefore be called into account.

An explanation fortunately is at hand in the law of the conditioned response (p. 39). An originally inadequate stimulus, if given at the same time as the biologically adequate stimulus, will, after sufficient repetitions, suffice of itself to call forth the characteristic response. An illustration will show the operation of this law in the development of the withdrawing reflexes. The writer's son at the age of fourteen months was pursuing his ball which had rolled under a radiator. In reaching for it he burned his fingers and quickly withdrew his hand. A few days later he started again to reach for a toy which he had lost in the same manner when he suddenly looked at the radiator and drew back. His mother watching the process repeated the word 'hot' emphatically several times. After a few similar experiences the child learned to withdraw from any object at the sound of the spoken word. The response had been transferred, first, from the primitive pain receptors stimulated by heat to the sight (visual stimulus) of the radiator, and, secondly, to the auditory stimulus of the word 'hot.'

In the same manner the withdrawing reactions of the child come through his experience and the social influence to be transferred to a considerable range of objects. In many cases the conditioned response is established by using language (verbally represented situations, accounts of dangers fancied or real) in order to evoke the original reaction. The *name* of the dangerous place or object would then, as the conditioning stimulus, be responded to by the withdrawing response which followed the original, verbally presented, situation. Through this substitution of language for the

has faced the first objection by asserting his belief in innate ideas. (*An Introduction to Social Psychology*, 8th ed., p. 399.) The evidence, however, is not forthcoming.

Within recent years there has been an increasing tendency among psychologists to deny the existence of instincts as maturations of complex cognitive or preceptual patterns. See references cited at the end of this chapter.

actual stimuli in behavior, the social influence is able to extend the principle of conditioning to a far-reaching education and control of the individual. The withdrawing tendencies evoked may be attached foolishly, and by arbitrary conduct of the elders, to such benign situations as the dark, 'haunted houses,' and special articles of food; or wisely to the real perils of life, such as fire, high places, sharp instruments, and wild animals.

The withdrawing and avoiding responses are subject to conditioning for the social as well as for the individual good. There is profound psychology in the proper administration of punishment. If the year-old baby has its fingers rapped each time it scratches at its parent's face, the response of withdrawing the hand from the painful chastisement will soon become attached to the sight of that erstwhile interesting countenance. And so at a later age with the correction of trespassing, stealing, and other anti-social acts. Susceptibility to scorn and the tendency to shun social disfavor have even greater force as determiners of the withdrawing responses. Deprivation of pleasure serves a similar purpose. On the whole the part played by the social influence in modifying the afferent side of the withdrawing and other prepotent reflexes is one of the most important chapters of social psychology.

2. The Efferent Modifications. The training of the individual must provide not only for conditioning of the withdrawal reflex by appropriate stimuli, but also for a refinement and specialization of the act of withdrawing itself. The prepotent reflexes, as previously stated, consist of large groups of allied reactions, somatic and visceral. Efferent development is a process of selecting from among the group those movements which are most effective in carrying out the function of the reflex; that is, in this case, removing the body from the offending stimulus. Whenever a new type of withdrawal act is learned, the original stock of movements from which the selection is made includes not only original reflexes, but also previously acquired habits representing more complex coördinations. Thus *flight* is a motor development of the withdrawing reflex which involves successively higher integrations of habits, such as averting the body, creeping, walking, and running. *Concealment*, considered an instinct by some writers, is also a habit based upon trial-and-

error learning. When the little girl puts her head under the bedclothing, the flash of lightning is no longer seen; that is, her visual receptors have been withdrawn from a stimulus which, either through its intensity or through information received about it, is an adequate producer of the withdrawing reaction. True concealment is a similar forestalling of possible contact with the avoided object. It is a withdrawal in advance. In the history of mankind withdrawal from the cold and other inclemencies of nature has led to the extensive acquisition of habits of *providing clothing and shelter*, habits which have been learned through social continuity by succeeding generations. Behavior which we term *modesty* is clearly the result of training and not of instinct. It arises from the formation of specialized habits of withdrawal from the gaze or presence of others when nude or under other special conditions. Language and the disapproving behavior of parents and others upon occasions of improper exposure are the primary withdrawal stimuli whose response soon becomes conditioned by the exposure itself. Through a wider and subtler process of language-conditioning the retirement reaction of modesty becomes linked with the 'exposure' of one's personal qualities and merits. The emotional component of modest behavior resulting from exposure in situations demanding privacy is *shame*. It is significant that this word attaches also to emotional reactions which constitute the sense of moral ignominy. The identity of designation may be attributed to the common element of social disapprobation to which both are specialized efferent responses. Their common origin is further suggested by the fact that the revealing of turpitude, such as graft and adultery, like the discovery of physical nakedness, is frequently termed an 'exposure.'

Learning and Thought in the Efferent Modification of the Withdrawing Reflex. The specific process by which efferent modification is effected may be outlined as follows. In response to a novel nocuous situation there occurs a large number of random movements including both original reflexes and previously formed habits. For example, a rat imprisoned in a burning building would probably run wildly about, biting, clawing, squealing, and entering every possible nook and cranny. As soon as an exit is found, the withdrawing is successfully completed and the random responses

cease. If placed in the same situation again the rat would probably find the way of escape in a shorter time than before. In still further trials the time required and number of useless movements made would continually decrease until the physiological maximum in the efficiency of escape was attained. This is known as learning by trial-and-error, or better, by trial-and-chance success. Just why the reflex arcs which produce the successful movements are thus selected and 'fixated' in this process, while the useless reflexes do not persist, is not clearly known. A partial explanation may perhaps be found in the fact that the successful response, since it occurs in each trial, is in the end the reaction most frequent in occurrence. It is also the most *recent* (that is, the last used) at the beginning of each trial, because its occurrence marked the termination of the preceding trial. These factors, combined with the reinforcing effects of visceral (emotional) reactions, are no doubt operative in lowering the synaptic resistance and fixating the arcs of the successful movements.

In their highest development the prepotent reflexes in man involve as their central portion the intimate correlating mechanisms of the cortex. By cortical activity — that is, by reasoning — the selection of the successful responses is greatly facilitated. Let us consider, for example, the behavior of a man caught in his room in a burning hotel. Unless he becomes confused, he will not rush about as did the rat trying every possible exit. He will think. That is, he will represent to himself the various exits. In terms of behavior the process involves two components: (1) the use of symbols, and (2) habitual attitudes (knowledge and experience) attaching to them. A symbol is a brief and labile response usually undetected in outward behavior, but capable of being substituted for overt responses. Incipient, subvocal, and inaudible word responses are particularly suitable material for symbols. By reacting with the production of the symbol for 'stairway,' the man in our illustration is able to call into play the neural processes representing habits which were formed by previous experience or information about stairways under such conditions. He may recall that the stairway would be likely to be choked by smoke and flames. His attitude (response) in this situation would be clearly antagonistic to the

impulse to escape by the stairs. This exit being thus blocked (by thought), he continues with a random series of symbol responses representing avenues of possible escape (the elevator, the fire escape, the rope of bedclothes, and so on) until one is found whose train of associated, habitual attitudes presents no check to its use in the withdrawing reaction. This symbol is followed by its overt action, and the problem is solved. Symbols are thus reactions which are used as abridged and 'internal' trials in the process of trial and error.[1] They require but an instant to execute, and involve neither the delay nor the danger of overt trials. They serve to reinstate one's past experience regarding the proposed movement and so predict the outcome. Thought, therefore, is an abridged and highly efficient form of trial-and-chance success in the consummation of the prepotent reflexes.[2]

Conclusions regarding Modification. From these introductory illustrations of the withdrawing responses we may now deduce somewhat more precisely the laws according to which the fundamental activities are developed. *The prepotent reflexes are subject to modification by synaptic changes in their central portions. The effects of such changes are (1) to extend the range and complexity of the stimuli capable of exciting the response, and (2) to refine and specialize the response itself. The first effect, which may be called an afferent modification, is brought about by the principle of the conditioned response; the second, resulting in an efferent modification, is due to the selection and fixation of successful random movements in the processes of habit formation and thought.*

II. Rejecting. By the third day of life the use of the hands and feet in pushing away noxious stimuli from the body is clearly seen. There has been observed in the infant four days of age a response of pushing at the hand of the experimenter who was pinching the nose of the infant. When the newborn baby is lying on its back with legs extended, a slight pinch on the inner surface of one knee

[1] It will be noted that the term 'symbol' is here used to denote primarily an actual response which is used in place of other responses, rather than a 'conscious idea' standing for other ideas.

[2] It is impossible in this place to do full justice to the process of thinking. For a more complete account the reader must be referred to the behavioristic interpretations of thought included in recent textbooks on general psychology.

will cause the opposite foot to be drawn up, somewhat awkwardly at first, until the sole finds and presses against the hand that is pinching. This reflex, although slow and crude at the start, has a deep evolutionary foundation. It is precisely the reaction evoked by stimulating with acid one leg of a frog whose spinal cord has been separated from the brain. If the stimulus is intense and difficult of removal, there develops a greater force in the rejecting response, together with random movements of other parts of the body and crying. A primitive discomfort closely resembling anger is the visceral component of the reaction. Indomitable restlessness of movement in carrying out prepotent activities in the face of difficulties is universal in the animal kingdom. The imperativeness of the prepotent reflex is Nature's provision that adaptation and survival will be achieved.

The afferent modifications of the rejection reflex involve its production by all kinds of potentially dangerous or irritating objects which are best escaped by pushing them away. If a caterpillar or a hornet walks across the hand, since the visual and tactual stimuli have been associated in experience or through teaching with pain and revulsion, the child will react to the sight and touch of the object and quickly remove it *before* the actual hurt is experienced. A still more effective and 'forehanded' conditioning is accomplished when the response occurs to the visual stimulus alone, and undesirable objects are rejected before they even reach the body. Well before the age of a year the infant pushes out toward the approaching nursing bottle, when in no mood for its contents. A little later the same response is shown toward bitter medicine and toward toys which are proffered in an attempt to beguile his stormy moods. These are reactions of 'rejection in advance,' just as we found concealment to be a 'withdrawal in advance.' In the writer's son the repulsive movement was early combined with a downward striking movement of destructive effect. Such behavior tends to convince one that the use of the hands in self-defense or attack is attributable rather to an efferent development of protective reflexes than to a 'fighting instinct.'

One of the most important modifications of the rejecting reflex is the habit of *cleanliness.* The part which social agents must play in

influencing the child to regard dirt with the aversion necessary for its removal is well known to all. In the cortical and verbal processes of later life we find still more extensive afferent modifications. Disagreeable or debasing proposals, offensive personalities, and attempts to hamper us or to lower our self-esteem become adequate stimuli for producing the rejecting response. The efferent aspect in such cases often involves the language effectors and the attitudes and facial expressions of scorn and aversion. The frank response of disgust employs, at least incipiently, a primitive reflex of rejection of nocuous internal stimuli, namely, vomiting. Its conditioning by social objects is apparent. We acquire the afferent modification of reacting toward certain types of individuals or situations *as if* they were nauseating to us.[1]

III. Struggling. If the limbs or the head of a newborn child are held so that the usual random motions are impossible, a struggle ensues which grows more violent as the restraint continues, involving more and more of the bodily musculature, and accentuated by crying and later screaming. The restraint of movement is no doubt to be considered biologically as a nocuous stimulus. The struggle response is a compound of the two more elementary reflexes of rejection and withdrawal. Attempts are made both to push away the restraining agent, and to escape its force by withdrawal. The accompanying emotion is therefore often a mixture of anger and fear. The two reactions are readily seen in certain wild animals when captured and held in the hands. Many creatures, pursued and brought to bay, quickly substitute for the withdrawing response of flight the rejecting or repelling response of fighting. It is probable that the habit of *pugnacity* arises genetically from the rejection employed in self-defense. When the efferent development is complete — that is, when one has learned how to fight — the use of the ability for offensive purposes is likely to follow.[2] A response which appears to be a purely offensive attack is

[1] This extension of physiological disgust is characterized by Professor McDougall as the "intellectualizing of an instinct." We shall return to it in the chapter dealing with facial expression.

[2] Offensive fighting, however, since it is practically always for the purpose of protecting one's interests, is at least partially defensive. In a suggestive article Professor Wallace Craig has shown that fighting throughout the animal kingdom is defensory and protective in character. The animals have no inborn desire to fight,

often correctly interpretable as 'rejection in advance.' Experience teaches that the best way to repel injury through the attack of another is to attack and disable him first. The irreconcilable attitude which attends this kind of situation is one of the chief menaces to civilization. The threat of hostility implied in large protective armaments is an example. The espousal by the German people of the Kaiser's policy of invasion and devastation in order to protect themselves in advance from supposed annihilation is also a case in point.

Afferent Development: Extension of the Stimuli of the Fighting Reactions. At the beginning of life the human infant struggles indiscriminately against any restraining force, whether it be another human being or a blanket which confines his movements. There is no inherited susceptibility to *social* stimuli, as distinct from other stimulations, in anger. At a later date the child *learns* that certain actions, such as striking, scolding, and screaming, are effective toward persons, but not toward things. In adults, although the infantile response is still sometimes seen, the fighting reaction becomes fairly well limited to stimuli whose hurting or restraining influence can be thrown off by physical violence.

The various prepotent reflexes are prominent among the movements whose blocking leads to an angry struggle. Interference with the nursing activity (hunger reflexes) is an invariable stimulus for this response. There is an extension to an ever-widening circle of stimuli as the child develops, so that the restriction, not only of the innate mechanisms, but of all kinds of acquired habits based upon them (for example, blocking of the habits of manipulation through withholding a desired plaything) is certain to evoke the struggle. At a later age an insult, which thwarts one's habitual bearing of self-esteem, has often a more potent effect than direct bodily attack. Finally, our readiness to struggle against the thwarting or restraint of others, under conditions which we term 'injustice,' is the final development in the transfer of the fighting response to situations of a social character.

(*International Journal of Ethics*, 1921, XXXI, 264–78.) Considerations of this sort discredit the militarist's argument that war is inevitable because of an "instinct to fight." There is an innate reflex basis for self-defense; but there is none for fighting in itself.

The activities of sexual and family love are particularly liable when opposed to lead to struggle. The ferocity of sexual jealousy and the blood feuds of the mountaineers are well-known instances. The hunger reactions are equally potent in the fierceness of the struggle to which they lead when blocked. Aggression, unsatisfied hunger, crowded conditions, and limitations which hamper both the economic and the sex life, are, when they evoke struggle responses on a large scale, the cause both of industrial conflict and war.

The Social Influence upon the Struggle Reflex. Under the conditions of survival of the fittest the original and unaltered operation of the responses of economic struggle would lead one creature completely to annihilate, if possible, all the others with whom he must compete for the limited subsistence. But society has grafted upon these reflexes a number of remarkable modifications. Man through the docility of his period of infancy has developed habits of regard for others and submission to social control, so that his struggle against beings who by competition tend to check his own autonomic activities has been greatly altered. The youth must learn to treat the struggles of life as a game which he must play according to the rules. Aggressive physical combat is discouraged and self-control inculcated. The fiery Scotsman in Mr. J. M. Barrie's *The Little Minister* had been trained, when incited to wrath, to repeat furiously the books of the Old Testament before acting upon his anger. After this performance his reaction was more likely to be one of righteous remonstrance than of homicide.

It is clear that the mechanism of self-control is based upon antagonistic reflexes. Two opposing impulses compete for mastery. They are (1) the prepotent response of crushing the agent who thwarts our activities, and (2) the habit of submission to control by social sanction. Under normal conditions the result of this antagonism is the selection of a new and highly discriminated response. A final common path is chosen which serves both the prepotent needs of the individual and the interests of society. A resolution, for example, is afforded by fair competition and rivalry, which provide a successful outlet for the response of struggling against limitation of the vital processes, while at the

same time fostering that regard for the rights of others upon which every social group depends.

The Yielding Response — Habits of Activity and Passivity. There exists in many species of animals a curious antithesis of the struggling reflex. Creatures of such widely different orders as insects, reptiles, birds, and mammals, when surprised or overpowered by a strong foe, will sometimes become limp as if paralyzed or else assume a catatonic rigidity. It has been said (though the writer knows of no verification) that the struggles of a baby held very firmly will soon subside, and he will become passive in a way that does not suggest fatigue. When drowsy the struggling of an infant may be readily quelled by this method combined with rocking. Neither the mechanism nor the significance of this reaction is known.[1] There may be some biological end to be attained by complete submission in cases where being conquered would be the inevitable issue of combat. The reflexes employed are the direct antagonists of those in the active, victorious state. Flexor contractions give way to extensor, and the body becomes limp and yielding. A complete polarity occurs between the attitudes of the victor and the vanquished. In infancy and childhood there are built up definite habits in the form of attitudes of activity and of passivity toward persons who are respectively weaker or stronger than the child himself. These habits, persisting as they do throughout life, are the true basis of those traits which are sometimes alleged to be instincts of 'self-assertion' and 'self-abasement.' We shall find that ascendance and submission are important in the study of the personality and the social contacts which it makes.

IV. Hunger Reactions. The Approaching Responses. The behavior which we have been thus far discussing might be conveniently classed under the general heading of *avoiding responses*. The biological function of these activities is protection; and their stimuli arise from contacts which the organism makes with external objects. The responses also are mainly in the somatic group of

[1] For a possible explanation on the basis of thyroid secretion, see J. P. McGonigal: "Immobility: An Inquiry into the Mechanism of the Fear Reaction," *Psychological Review*, 1920, xxvii, 73–80.

Another theory explains the 'death-feigning' reaction as due to an excess of adrenin, a substance secreted in intense emotional excitement.

effectors. There is in many such reactions, however, a visceral emotional component having an unpleasant conscious quality, as in fear and anger. These reflex mechanisms may be shown schematically in Figure 7, page 36, by connecting *SR* with *SE* and *VE* respectively. The activities now to be considered arise from *internal stimulation* of the interoceptors, and are somewhat periodic in function. The recurrent hunger of all creatures is an example, and also the internal stimulation of sex. While the receptor end of the arc is visceral, the effector organs, as before, are chiefly somatic, with certain visceral responses, pleasant in quality, accompanying the final or 'consummatory' stage of the action, as in feeding or sex behavior. In Figure 7 these reflexes may be represented by connecting *VR* respectively with *SE* and *VE*. By the familiar method of the conditioned response a number of external stimuli of food and sex, which have been present at the same time as the original visceral stimulation (*VR*), become adequate to arouse a complex group of *approaching responses*. These reactions in their full development comprise the bulk of human behavior, having the function biologically of sustaining the individual and the race.

There is a general formula applicable to the approaching reactions. In terms of consciousness it may be stated as follows. An internal need or desire — for example, for food or for a mate — is experienced, called in the older terminology an 'appetition.' Thereupon a restless procedure serving the purpose of a search is entered upon and continued until the needed object is obtained. After the hunger or lust is satisfied, the creature lapses into its former quiescence. For the explanation of this cycle we must turn to the mechanisms of behavior. A condition of internal maladjustment — for example, lack of nutriment — sets up internal stimulations, such as those caused by the contraction of the stomach muscles in hunger. These stimuli produce responses in the somatic effectors consisting of wandering and searching movements of the whole organism. These movements serve sooner or later to bring the receptors of the creature into contact with an edible object. The prey is devoured, and the presence of the food in the stomach promptly abolishes the stimuli of hunger contractions and with them the overt seeking activities. There follows a period of repose

until a recurrence of the hunger stimulus, or perhaps another type of internal stimulation, again sets the somatic effectors into operation.

The Learning Process in Hunger Reactions. The approaching responses become modified in the process of learning in the same manner as the avoiding responses. We have already given an example of the latter in the escape of an animal from a dangerous situation. If we place a hungry cat in a puzzle box or cage with a simple latch mechanism on the inside for opening, and if we place food where the animal will observe it through the bars, we shall be able to witness in its primitive form the hunger response. As in our former illustration the prepotent stimulus (this time internal) leads to the performance of the complete repertory of movements, both instinctive and habitual. Climbing the bars, clawing, biting, mewing, and many other responses are made in purely random fashion. Finally one of these movements chances to release the mechanism. The door opens, and the prisoner escapes and obtains food. When placed in the same apparatus for another trial the animal strikes the correct (that is, the releasing) movement more quickly and precisely than before; and in succeeding trials the selection and fixation of the useful reflexes, and the dropping out of the useless ones, proceed in the usual fashion.

Autonomic Interests as Drives in Learning. Although the exact nature of the fixation process is still obscure, the important rôle of the viscerally stimulated prepotent reflexes in the maintaining of restless movements, the transfer of stimuli, and the selection of the most efficient responses in habit formation is very clear. Hunger is the supreme drive of the learning process. Sex is a close rival. Other important factors, such as rivalry, desire for social approval, and the like, are incentives derived from these two. The baby's earliest and most facile learning is exhibited in turning his head to find the mother's breast, and later in holding the nursing bottle, and also in the transfer of the eager responses, originally made in tasting food, to the sight of it, and later to the parents and the sound of their footsteps. In these exciting moments the synaptic resistances of the useful afferent and efferent pathways are lowered, and the acquisition of the habit rendered speedy and certain.

All teachers testify to the readiness with which any fact which relates to an 'interest' of the child is assimilated. It is probable that interest can always be traced genetically to an autonomic foundation. The promise of a stick of candy causes the child to 'set himself' to memorize the twenty-third Psalm with alacrity, a task which the tedious dogma of piety could scarcely accomplish in an entire day. Ultimately, if not immediately, the 'setting to learn' is generally reducible to the approaching reflexes whose afferent side lies in the viscera. The outworn pedagogical view that man is a creature controlled essentially by Reason divorced from the lower 'appetites,' is rapidly being displaced by this deeper truth. Intelligence is the servant, not the master, of autonomic activities.

The Human Hunger Reflexes and their Development. Our study of the learning process shows the necessity of regarding the prepotent reflexes not as unitary pathways, but as large groups of reflexes, often diffuse in character, and involving the unspecialized play of numerous effectors. Out of this chaotic mass-response the learning process selects and fixes those movements which, in removing the source of prepotent stimulation, satisfy the demands of life. In the newborn infant the hunger contractions of the stomach give rise to crying, thrashing about with arms and legs, and turning the head from side to side. If an object touches the cheek the head is quickly turned so as to bring it into contact with the mouth. Sucking, in many cases at least, is not perfected at birth, but requires a certain amount of practice often with artificial induction. This response together with swallowing is, however, made serviceable by use almost upon the threshold of life. Movements of the head and body toward the source of food are also selected very early from among the random activities and fixated by the learning process. The hands and arms develop their earliest coördinations in connection with the mouth. Finger-sucking is followed by the holding of the bottle of food, and later by eating with the knife and fork. It is interesting that the original component response of crying persists because of its effect in producing nourishment through social agencies. In the second year the innate random vocal reflexes begin to take the form of language which, by a more

precise integration with the mechanism of various bodily needs, replaces crying as a method of controlling the social environment.

In the broader spheres of adult behavior the hunger responses join with those of sex to form the powerful undercurrent of practically every human life. The acquisition of a trade or profession may be looked upon as the supreme achievement in the efferent modification of the prepotent reflexes of hunger and sex.[1] The social and intellectual tradition in vocational training, involving the use of language and thought, gives incalculable aid in preparing for the economic and domestic future of the youth. In the trial-and-error procedure, by responding to the social instruction, he rules out in advance many of the major errors. His energies are thus saved for the more intricate and progressive adjustments to his particular problem.

Prepotency in Habit. A question naturally arises whether in the higher intellectual and artistic vocations the autonomic drives are really of fundamental significance. The artist and poet work, it is believed, for sheer love of their work. They eat only to keep alive so that they can work. The miser lives for his gold; the food interest is reduced to a minimum in favor of the mercenary motive. These exceptional cases are probably to be explained as a transfer of emphasis from the original prepotent stimulus to the mechanism by which it has been habitually gratified. Through a restriction of the field of response to a certain line (such as music, art, entomology, etc.) in which the individual possesses aptitude, the mechanism employed appears to have become a drive in itself. It is probable, however, that such 'derived drives' are more dependent

[1] The reader may think it far-fetched to say that these complex acts of acquired skill are modifications of certain simple, original reflexes. They seem rather to be integrations of habits which can be put to the service of any bodily need. Genetically considered, however, the presence of some powerful (prepotent) stimulus was necessary in order to evoke the crude or random activity through which they were, by trial and error, acquired. This early stage is that of the infantile prepotent reflexes which we have described. Integration of the nervous system makes it possible for the skilled acts, once learned, to belong to the *general action repertory*, and to be called out by any appropriate prepotent stimulus (as final common path) in the same manner that the original, unskilled movements were evoked. In this sense, therefore, the skilled performances of life may be regarded as modifications and enlargements of scope of the original prepotent reflexes.

than we commonly recognize upon the original approaching reflexes which we have classified as prepotent. The spur of economic success and comfort and the desire for connubial happiness are both the origin and the mainstay of many an original and productive career. Genetically considered, autonomic sources are usually discoverable, as in the case of a rich young lady who, having been disinherited by her parents for marrying a poor man against their wishes, developed a tremendous energy for work, saved, and grew thrifty to the point of miserliness.

One may interpret the habit of *manipulation* as a response which has acquired a kind of potency through its connection with prepotent reflexes. It appears so early and is so vigorously pursued that it is considered by many able writers to be an instinct. Since it clearly arises from simpler, non-manipulative origins, its assignment to the category of a habit seems, however, to be at least equally sound. The genetic components of manipulation are the newborn activities of grasping and of getting the hand into the mouth, and the later developing response of reaching. As soon as objects are seized they are taken to the mouth, since that is one of the most frequent terminations of all infantile hand movements. This reaction is a part of the complex group of reflexes in the hunger response. At a later date the infant inspects the object before mouthing it; and finally *all* the interest becomes centered in the examination of the object and its manipulation in random motor play. If we regard the hunger (mouthing) reflex as the origin of this habit, we have here a remarkable case of an efferent development acquiring the function of a prepotent reaction in itself. The tendency to manipulate is far-reaching in its importance. In conjunction with certain prepotent reflex groups it probably forms the basis of the early trait of *curiosity*, and the later habits of *hunting*, *hoarding*, and *constructiveness*.

Social and Affective Aspects of Stimulus Transfer. The sight and taste of food arouse in the hungry individual salivary secretions and pleasurable movements of feeding. Pleasant feelings and anticipatory movements come soon to be attached by the law of conditioned response to situations accompanying the feeding or to persons through whom the food is obtained. This transferred

reaction of pleasure is the basis of the earliest attachment of the child to its parent.

With the gourmand the pleasure accompanying the act of eating, rather than the cessation of the gastric hunger stimuli, becomes the prime consideration. This was the case with the Roman voluptuaries who were said to have disgorged their food between courses in order to prolong their alimentary pleasures. Through socially approved custom the original and biological function of prepotent reflexes is thus subject to alteration. An opposite tendency exists to-day in regarding a dinner party primarily as a means for social contact, many persons affecting a superior aversion to the nutrient part of the ceremony.[1]

V. Sensitive Zone Reactions. Response of the Infant to Tickling. At about the age of six weeks a light stroking of the baby's lips or pressure upon the cheek will evoke a smile. Soon other regions of the body, such as the orbits, neck, axillæ, lower ribs, thigh (just above the knee), and soles of the feet, become sensitive to pressure or light touch. The responses elicited are mild squirming movements, 'pseudo-withdrawing' in type, arching of the back, thrashing of arms and legs, giggling, and finally laughing. Why these zones are sensitive, and why their cutaneous receptors should be connected with the spasmodic responses of ticklishness, we can only conjecture. Little is known of their physiological or biological significance. The affective state under mild sensitive zone stimulation is pleasant. The random tossing and squirming responses become refined with motor development into movements which bring about a continuance of the agreeable attack and a surrender to it. Witness a child holding up its foot to be tickled again. For this reason we may classify these reactions with those of hunger under approaching responses, in spite of the fact that the stimulus seems to be external rather than visceral.

Relation of the Sensitive Zones to Hunger and Sex. There is an early association of the sensitive zone reactions with those of hunger in that the mouth is concerned in both. Nursing combines the

[1] The social alteration of the biological purpose of instincts is well discussed in an article by Professor W. S. Hunter cited at the end of this chapter.

stimulation of this region and the consummation of the hunger cycle in one series of acts.[1] Freudian psychology, on the other hand, assumes that the sensitive zones of the child have a sexual significance, and applies to them the term 'erogenous zones.' While this interpretation cannot be fully credited, there are certain significant resemblances between ticklishness and sex reactions. (1) Both give rise to approaching responses having the effect of enhancing the tactual stimulation. (2) Both are pleasurable in the affective quality of their sensations, and there is a strong introspective resemblance between the experiences of itch, tickle, and lust. (3) In the mating of adults the stimulation of both (sensitive and sexual zones) are combined in a series of love-making events culminating in copulation. On such occasions — for example, in the embrace of lovers — the sensitive zones become particularly potent in producing responses. These regions may be said to represent the infantile stage of development in a complex system which, in the adult, includes the sex zones proper. Their chief interest for social psychology lies in their importance in the problems of adjustment within the family.

Pleasurable Habits based upon the Sensitive Zone Reflexes. The caressing which children commonly receive and solicit is intimately associated with sensitive zone stimulation. Their cuddling of dolls and toys, and expressions of love toward these objects, have their root in the same source. There are many afferent modifications of the reflexes arising from the stimulation of these zones. The earliest is the transfer of the stimulus from the tickling itself to the person who does it. After a few such titillations the baby will laugh in a most 'tickled' fashion upon the mere approach or sudden movement of the parent. It is not improbable that the effort to obtain praise and the avoidance of censure (sometimes spoken of as social instincts) are partially derived in a similar manner. Words and tones of approval are connected with caresses, playful behavior,

[1] In pigeons there is a curious combining of these two mechanisms. In billing the sensitive zones of the beak are involved in a series of amorous activities. It is, however, by similar movements that the young thrust their beaks into the parent's mouth in order to obtain food. The latter action has, in fact, been observed under certain conditions to evoke in the parent the characteristic sexual response. (C. O. Whitman: *The Behavior of Pigeons*, pp. 64, 65–67, 107–08.)

and other stimulations of sensitive zones by the parent; and they come to evoke the same responses as the latter, namely, actions inducing their continuance and repetition. This process is the basis not only of a large amount of filial childhood affection, but also of the susceptibility of the individual to control and development through social influences.

VI. Sex Reactions. **The Original Sexual Reflexes.** During the age of puberty there occurs in both sexes a rapid development of the receptors and effectors employed in sex behavior. Hormone secretions from the cells of Leydig stimulate the growth of the secondary sexual characteristics, the genital organs mature, the erogenous zones upon contact yield pleasurable sensations, while the secretions of the reproductive, and possibly other glands afford an internal stimulation for sexual activities. There is meanwhile the familiar adolescent awakening of tender feeling and the various forms of love.

The original stimulus for sex responses is not, as is popularly supposed, an individual of the opposite sex. It is rather an internal excitant. In the male it is the gradual distention of the seminal vesicles, a condition requiring a fairly periodic discharge of their contents. The distention produces an increase of tonicity in the wall of the vesicle, and this internal activity, combined, no doubt, with similar glandular effects in other parts of the pelvic viscera, stimulates the interoceptive end organs in these parts. In the female the excitatory visceral changes are probably caused, not by distention, but by some hormonic (glandular) process occurring about the time of menstruation. The response which follows this stimulus consists of random and restless activity quite analogous to that in the case of hunger. The tumescence of the sex organs sets up further stimulations in these parts, which provide allied afferent processes having the same outlet (that is, through random seeking movements) as the visceral stimulus. The movements are sufficiently directed to bring the erogenous areas already yielding lust sensations into contact with some object, thereby adding external tactual stimulations to the original and purely internal stimulus. In the human species (and in some animals) stimulations from the contact of the sensitive as well as erogenous zones are added to the

excitations during the sexual embrace. In the male copulation thus raises the tonic contraction of the muscle of the genital apparatus to such a pitch that it breaks over into the phasic contractions by which the accumulated sexual secretions are discharged. The complete sexual reaction, therefore, involves a chain of prepotent reflexes. It begins with an internal stimulus caused by glandular activity and distention, followed by crudely directed reflex responses which bring the highly sensitized and tumescing organs into contact with some object in the environment. Contact with this object contributes sufficient stimulation to evoke a second group of reflexes, those of emptying the contents of glands and vesicles whose distention was the original cause of the activities described. After sexual satisfaction, therefore, as after the satisfaction of hunger, the organism lapses for a time into quiescence.[1]

The internal character of the original sex stimulus is clearly shown in those animals which have well-marked breeding seasons. Such seasons depend directly upon the periodic activities of the sexual glands and smooth muscle. A pigeon which is not 'in season' will evade or repel any approach made by the opposite sex. On the other hand, a male bird in the period of sex excitement will begin the usual courtship antics at once, and, in the absence of the female, will make advances to individuals of its own sex.[2] Among human beings, although the relations of the sexes are greatly complicated by recognition, imagination, and other cortical processes, the original sexual stimulus is also unquestionably internal in its location. Stimulation from the physiological activities of the internal sex organs, rather than the sight of a member of the opposite sex, is the drive to action. The normal sex life of adults, while it is not so clearly cyclical as that of lower animals, is nevertheless timed according to the occurrence of a true organic need.

The Afferent Modification of Sexual Reflexes. Sex Attraction. The long period of childhood and youth preceding sexual maturity affords an extensive opportunity for training, through social tradition and example, in the lore of sex and the significance of male and

[1] For certain portions of this account the writer is indebted to a theory of sex reactions (as yet unpublished) developed by Mr. F. T. Hunter.

[2] Whitman: *loc. cit.*

female. The boy and girl know about family life and, in a general way at least, the procreative function of marriage. They learn from their elders the part played in life by courtship and love-making, as well as the habits and attitudes of chivalry, modesty in regard to one's person, and reticence upon sex topics. Habits which must inevitably control and modify the prepotent reflexes of sex are thus established *well before the appearance of the reflexes themselves*. When the first awakening of the internal sexual urge is felt, the boy, if he has been properly instructed, knows that the female is the proper object of his searching movements. He is further aided in this new adjustment and in understanding the contact which it involves by the experience of the sensitive zone stimulations. These he has known from infancy, and they have already given a meaning, as yet non-sexual, however, to caresses and other expressions of affection. The realization that a member of the opposite sex is the most satisfactory object of the sex desire thus represents a stimulus transfer, or allied conditioned response, by which the sight of a possible mate augments, or of itself directly evokes, the seeking responses which originally were produced only by the organic stimulus. As in the afferent modification of other prepotent reflexes which we have studied, language and other social influences are of the highest value in the conditioning process.

A striking instance of the afferent modification of the sex reaction by social agencies among pigeons has been recorded by Whitman.[1] If a male ring dove is reared from infancy among carrier pigeons, and then p'aced at maturity among birds of his own species, he cannot be induced to mate with them. The breeding activities, however, speedily commence as soon as he is brought into the presence of a *carrier* female. The sexual drive — that is, the internal stimulating secretions — and the random activities to which they lead, are truly innate and hereditarily determined. The act of pairing between male and female, however, seems to be the result not of instinct but of learning.

To the average adult the opposite sex appears so obviously fitted for the mating process that he is likely to assume the apprehension of this fact to be instinctive. He has forgotten, however, that tur-

[1] *Loc. cit.*, p. 68.

bulent adolescent period before his sexual adjustment was perfected. Children pass through various stages in the comprehension and use of sex objects. In the absence either of enlightenment or of opportunity for coition the adolescent youth associates his sex feelings with those fortuitous objects or situations (for example, pressure of clothes, climbing trees, etc.) which afford contacts with the genitals during random movements, thus providing pleasurable erotic experiences. Masturbation, homosexuality, and other ready means for attaining the same end follow more or less inevitably. In the mature individual sex gratifications of this sort are termed *perversions*, because they indicate the persistence of a false or inadequate training in these matters. In childhood, however, they are only to be expected, in the absence of social control and direction, as natural stages in the process of learning by trial and error. Here again learning, rather than instinct, must be the guide in the search which is finally to end with mating in the normal heterosexual manner. Many perverts and neurotic adults are now known to be persons who have never advanced beyond the childhood stage in the education of the prepotent reflexes of sex.

The Problem of Sex Training. The moral of the preceding discussion is not far to seek. It is as pernicious to withhold information necessary for the development of the prepotent sexual responses as it would be to allow the child to grow up in ignorance of the objects upon which he should condition his reactions of avoidance, rejection, and food-seeking. If direction through social agencies is neglected, the youth must fall a victim to the more crude and often disastrous mistakes of trial and error in the process of learning sex behavior. To wait for puberty to arrive before beginning sex instruction is not only to throw away the priceless years of childhood which should be used in building up the proper attitudes for sexual maturity, but also to run the risk of allowing habits to be formed which are antagonistic to the normal sex reactions of the adult. One important caution, however, must be borne in mind. The mere informing of the child in sexual matters, if not combined with the formation of attitudes, principles, and habits proper to persons possessing such knowledge, is as likely to produce harmful as it is beneficial results. The mere desire to "tell the child the

truth" is in itself no adequate justification for imparting the physiological facts. The aim should be not merely sex enlightenment, but sex training.[1]

The efferent side of the sexual reflexes is as much in need of modification through learning and social guidance as is the afferent. Breeders of animals are fully aware of the crudity and clumsiness of random movements made in efforts for sexual union. In the human race the untaught youth is equally devoid of the knowledge and skill necessary for conjugal love-making and a wholesome sex life. A large proportion of marital discord and unhappiness results from the lack of knowledge and training whereby the random movements arising from the sex stimulations may be developed into responses nicely adjusted to the needs of both husband and wife. As for the broader aspects, such as the wise choice of a mate, the regulation of the reproductive function, and the application of the laws of heredity, we are but on the threshold of progress.

Sex and Sensitive Zone Reactions in Familial Behavior. There is a general agreement among psychologists that the family responses, such as parental and filial behavior and feeling, are intimately connected with the sex reactions. Among both human and sub-human creatures the birth and rearing of offspring is an intrinsic part of a cycle which begins with courtship and selection of a mate. There extend throughout this cycle a continual internal excitation and a series of reactions to stimulations of the sensitive and erogenous zones. The incubation of eggs by birds and the suckling by mammals (including man) fall within this class of pleasurable and approaching reactions. Parental as well as conjugal behavior is largely conditioned by internal stimulation. The distention of the crop in certain birds and the rapid secre-

[1] Reports of social workers reveal the importance of the pre-adolescent years for establishing wholesome attitudes toward sex adjustments. A psychologist in charge of work with delinquent girls divided her prostitute cases into two classes: those who were reformable, and those for whom nothing could be done. The latter class consisted almost entirely of girls who had been brought up in immoral home surroundings or who had been the victim of an assault (usually by a male relative) before the age of puberty. (E. R. Wembridge: "Work with Socially Maladjusted Girls," *Journal of Abnormal Psychology and Social Psychology*, 1922, XVII, 79–87.) The sex drive is so powerful that, if the proper inhibitions have not been established before adolescence, the chances of building them up after that period are very slight.

tion of milk in mammals are the immediate stimuli for feeding the young.[1]

The love life of a human being is lived through contact, not only with the spouse, but also with the children. For most adults, to see a baby is to desire to fondle it in a very lover-like fashion. The love reactions toward children are similar to those which the child manifests toward its parents or other relatives. That is, they are responses mainly to stimulations of the sensitive zones, and are productive of caressing and fondling movements. The stimulation of sexual zones and true responses of sex are forbidden by custom and social standards. It seems probable, however, when we recall the fusion of sensitive zone and sexual reactions in the adult, that the internal sex drive allies its stimulation with that of the sensitive zones to bring about the reaction of fondling (final common path). Periods of sex excitement, moreover, are associated both in man and the lower animals with periods of unusual fondness for offspring.

The law of conditioned response is also operative. If a woman loves her husband and her home, her lover-like responses will be extended to a new stimulus, the child, which through its origin as well as through its immediate presence is closely connected with the beloved objects. The reverse side of the picture is sometimes seen in hospitals where illegitimate children are born whose mothers are in the throes of shame and fear, and perhaps of hatred of the men who caused their maternity. The absence of the usual maternal feelings is often conspicuous in such cases.[2] Social standards and early training are likewise very important in determining the attitude which the parents adopt toward their offspring. Another evidence that parental love depends upon contact and experience is the fact that it grows with the child. Parental and maternal pride develop, and attractive plans are laid for the child's future. The fondling, nursing, protecting, and planning grow into definite

[1] Absence or abnormalities of this internal excitement probably account for such parental anomalies as defective cycles, abandoning of nests, and devouring of litters of young. See Whitman: *loc. cit.* For some valuable observations on the physiology of the 'maternal instinct,' consult Rabaud, E., "L'Instinct Maternel chez les mammifères," *Journal de Psychologie*, 1921, XVIII, 487–95.

[2] See J. B. Watson: *Psychology from the Standpoint of a Behaviorist*, pp. 257–58. Also Ruth Reed: "Changing Conceptions of the Maternal Instinct," *Journal of Abnormal Psychology and Social Psychology*, 1923, XVIII, 78–87.

maternal and paternal habits. These habits, sometimes loosely spoken of as instincts, rest upon the instinctive prepotent reactions of sensitive zones and sex; but their real development is brought about by the interplay between these innate mechanisms and the environment of the family.

The Sex Reactions and Learning. Considered in this broad manner the sex reactions are close rivals of hunger as drives in the learning process. In order to obtain access to the female the male dog or cat, through the trial-and-chance success method, will rapidly learn the use of the release mechanism of a puzzle box. The struggles of a mother bird in similar experiments to gain access to her nest and young result in effective learning by the same method. In human society the efferent modifications by which custom requires that the sex reactions shall be consummated lead into many productive fields. The lover must conform to the standards set for courtship, desirability of character, and economic standing. He must give up the irresponsible vagaries of youth for the sober achievement of the man. A vocation must be learned if he is to support the wife and children which are necessary to his love-life. Here, as in the case of the other instinctive bases of learning, we find that the social inheritance through schools and elders, and the use of language and thought processes, are of paramount importance. The nature of the vocation chosen in many cases depends upon fundamental individual interests or abilities; but the zeal with which it is studied and practiced is directly proportional to the inciting effect of the combined stimulations of hunger, sex, and the sensitive zones — in short, to the demands of economic and domestic life.

'Sublimation.' A great deal of speculative writing has been done on the so-called process of 'sex sublimation.' It is believed by some that the sexual drive represents a kind of free-floating energy which can be transformed by suppression and redirection into some 'nobler' pursuit, such as science, art, religion, or charity. In the present writer's opinion, it is nearer to the truth to say that the intellectual and cultural achievements of man represent things done *in the interest* of sex, and as a means to a more satisfactory adjustment of the sexual life, than to assume them to be a

substitution for or transformation of the sex drive. Many a young man whose passions led him into devious and profligate ways has been converted through marriage into an efficient producer. Sex is the spur which keeps native ability and talent always at their maximum effort. The operation of the sex drive under the stabilizing influence of family life is a factor of progress second to none in human society. One of the most serious problems of our higher and professional education is the restlessness and distracting influence produced by enforced celibacy long after the sexual maturity of the student. Much time and energy is diverted from study into seeking such sex excitements as chance and a conflict with the sense of propriety may allow. If this sexual effort could be allied with the goal of scholastic and professional attainment, as it might be in some cases by early marriages with child-bearing deferred, instead of being allowed to detract from serious study, the gain both in work and happiness would be enormous.

Social Factors in the Development of Fundamental Activities

At a very early age a child shows susceptibility to the influence of the social environment, and a ready *response to approval and disapproval*. The reason is fairly obvious. During the first two or three years every event of importance to his well-being occurs through the ministration of other persons. Features, facial expressions, and vocal sounds are the regular accompaniments of these events. It is obvious, therefore, that, through the law of conditioned response, these social stimuli must acquire an early and universal significance in child life. Attitudes of approval, disapproval, command, and prohibition acquire a value as forms of social control which persist through life and compel our obedience to law and other social sanctions. There is little ground for believing that this subservience to the attitudes of others is inborn, or that the child is instinctively responsive to what Mr. Trotter mystically calls the "voice of the herd."

Imitation. It has been asserted that the child possesses an instinct to imitate, and that this inborn tendency is one of the chief aids to learning. Probably both of these statements are incorrect.

The evidence for the innate neural disposition to imitate, though conflicting, is preponderantly negative. Such instances of apparent early imitation as have been reported are insufficient to establish the existence of an instinct of imitation. As for the rôle ascribed to imitation in learning, there is equal reason for doubt. In the vast array of habits acquired during the first eighteen months there is no *bona-fide* case of learning by imitation. A more complete analysis of alleged imitative behavior will be undertaken in Chapter X.

Gregariousness. Man is a society-forming animal. The congregation of human beings in groups of all sizes, and for all purposes, is one of the most universal of ethnic phenonema. That this congregating denotes a 'gregarious instinct' is a purely gratuitous assumption. The usual argument for this instinct is to ascribe to it a necessary rôle in large-scale aggregations such as football crowds and growing cities. Two fallacies are evident in this reasoning. The first is the ignoring of the powerful interests appealed to, which, although common to great numbers of individuals, are nevertheless individual rather than social in their driving power. Almost every one is interested in contests and exhibitions of power and skill. Cities draw youths from the country by a variety of excitements and opportunities having a universal appeal, and based upon the prepotent demands of each individual. Desire for flirtation and the sexual interest constitute the greatest single cause of the thronging of public parks and cafés. There is always some definite aim or interest, other than merely 'getting together,' in every congregation of people. This is true even for the purpose of recreation and social festivities. Emulation, exercise, dancing, exchanging news, and 'kissing games' are only a few of the more common incentives. There is no question but that the pleasure derived from these gatherings is greatly increased by the contact with others. This pleasure, however, is readily explained without the need of assuming an instinct to congregate.

The second fallacy lies in assuming that, in cases where the need of companionship *is* the actual motive, the seeking of human company merely for itself is necessarily an innate reaction. The stimulus usually asserted for the 'gregarious instinct' is the condition of

'loneness' or separation from the herd, which induces a restless searching until the creature is able to resume contact with his fellow beings. If the inheritance of reactions to specific objects or classes of objects is difficult to conceive of independently of experience with those objects, how much more incomprehensible is the notion of inherited reactions to the *absence* of specific objects. When a man loses his favorite pipe, he is restless and even lonely until he finds it. His restlessness, however, is more acceptably explained as the result of his having been long accustomed to the pipe than as the operation of an inherited reaction stimulated by the absence of the desired object. During a day hundreds of our habitual responses are directed toward or conditioned by our fellow beings. When we are removed from human society, these habits are in a measure thwarted. The effect is therefore unpleasant, and searching movements begin. Habit, then, is a better explanation than instinct for the uneasiness and misery of enforced solitary life. It should be remembered that there are many reclusive persons whose pleasurable habits have been conditioned by a solitary rather than a social setting. Large gatherings of people are shunned by such individuals. Or, if they attend the theater or ball game, they do so *in spite* of the crowd. Habituation to the group is the necessary condition of loneliness upon separation from it.

We may summarize our discussion of the social factors in the development of prepotent responses by the following observations.

It has been previously noted that the rage of an infant is at first directed as fully toward a blanket which confines his movements as toward a person. The appropriate reactions to stimuli of a social sort must be differentiated *by the learning process* from the reactions to non-social objects. Whatever instinctive equipment man may possess, it is individual in its nature. It is only the subsequently learned reactions that may be termed 'social.' It will therefore clarify our discussion if we avoid the conception of 'social instincts' and speak instead of the development of *social habits*. Among the latter the responses to approval, scorn, and other forms of social control are among the most significant. Submission, self-assertion, leadership, and other traits which are largely inculcated by training

are vital in determining the mutual adjustments of human beings. The importance of gregariousness, which is an effect rather than a cause, has been much overrated.

Conclusions regarding the Fundamental Activities

It is now possible to return with fuller understanding to the problem stated at the beginning of this chapter. Our aim was to give an account of the innate sources of behavior, and to show how the complexity of human activities is constructed upon these inborn foundations. A certain group of reflexes, either present at birth or involving a later ripening of receptors and effectors, were selected as the origins for which we were searching. These reflexes are classified as (1) the avoiding reactions, such as infantile withdrawing, rejecting, and struggling, and (2) the approaching responses to the stimulations of hunger and of the sensitive and erogenous zones. In the competition with other reflexes for the final common path, these reflexes are prepotent. They are of the highest importance for the welfare of both the individual and the species. And finally, they determine the subsequent acquisition of knowledge and skill by every human being. The intricacies of human conduct arise as modifications of these simple prepotent responses.

Upon the afferent side of the arc the modification proceeds by a process of conditioning, a vast array of objects and situations becoming the adequate stimuli for evoking both avoiding and approaching responses. Upon the efferent side progress is made by learning to solve efficiently more and more complex problems, such as those of escape, mate-securing, and food-getting — problems which must be solved for the satisfaction of the prepotent demands. Solutions of this sort proceed by trial-and-chance success, with fixation of the arcs involved in the successful movements. As infancy is left behind, that marvelously effective refinement of trial and error, known as thought, is increasingly employed.

If we seek to arrange under the various prepotent reflexes the neural organizations of habit and thought to which they have given rise, we are faced with a bewildering complexity. In many characteristic habits, such as walking, manipulation, talking, and constructing, an indeterminate number of reflexes have been geneti-

cally prepotent. It is also clearly possible that the reflexes in which the development of a given habit originated may differ under different environmental circumstances. Variations in the social influence likewise produce diverse trends of modification. Without, therefore, attempting to classify the fundamental habit systems, we may enumerate the more important ones in the following list: flight, escape, concealment, modesty, shyness, providing and wearing clothes, habitation, fighting, resentment, repulsion, cleanliness, rivalry, yielding, eating, drinking, food-getting activities, responses to tickling and amusement, æsthetic and play attitudes, chivalry, courtship, coyness, mating, caressing and fondling, maternal and paternal behavior, filial behavior and other family responses, manipulation, locomotion, developed vocalization, talking, reading, writing, curiosity, hunting, hoarding, constructing, imitating, domineering, self-assertion, submission, sympathetic behavior, response to approval and disapproval, learning of a trade or profession. These include the activities which are of major importance for the existence both of the individual and the social group. Being rooted in mechanisms which originally dominated in competition for final common paths, they retain as habits the domination of mature behavior. We may call them *prepotent habits.*

Because of their early and universal occurrence as well as their importance to life, some writers have considered many of the prepotent habits to be instincts. And indeed it may be urged that it makes little difference whether we call an action a prepotent habit or an instinct so long as we mean a certain definite response of a universal and fundamental character. The distinction, however, is a necessary one, because the unwarranted use of the term 'instinct' obscures, by implicitly denying, the influence of the social environment in the reactions concerned. The social psychologist ought to regard childhood, not as a blank period for the internal ripening of systems of conduct, but as an opportunity which must be used in *learning* such useful behavior through social contact. The sex reactions may lead a woman to a career of honored maternity or to prostitution, according to the social forces brought to bear in her early training. Instruction rather than a

'maternal instinct' must be the guide. The responsibility lies with *us*, not with our ancestors, to see that our children develop modesty, rivalry, wholesome and properly expressed resentment, avoidance of physical and moral dangers, regard for family, susceptibility to social control, constructiveness, self-assertion, and wisdom in sex matters.

From a theoretical standpoint also the instinct theory is an impediment to the scientific observation of behavior. It is a kind of 'blanket theory,' which having been used for certain reactions is likely to be extended without discrimination to others. The explanation that a certain tendency is 'inborn' is furthermore so final a statement that all actual observation and analysis of its formation is discouraged. The theory begins at the wrong end of the developmental process in making its assumptions. It seizes upon the completed activity, and reads back into the life of the child an inherited purposive development in the direction of that activity and determined wholly from within. In view of the uncertainty regarding the maturation hypothesis it seems better to adopt the genetic viewpoint, and beginning at birth with the simple reflexes, which are demonstrably innate, progress with no further assumptions than the well-known facts of the learning process.

In mankind, considered as individuals, there are certain inalienable qualities and tendencies of a social nature. Our reluctance to explain these characteristics as instinctive in no way diminishes their importance. The shaping of the fundamental activities by social factors renders the individual as truly socialized as he would be with inborn reactions of the same sort. To summarize briefly this shaping process: Social objects such as persons, attitudes, expressions, and language serve as the stimuli to which the various prepotent activities may be transferred. Approval and disapproval become the conditions of response. Through contact with others an enormous part of the learning takes place by which the original reflexes are converted into useful habits. The child and youth being docile and responsive to language, many prepotent stimuli need be represented only indirectly; that is, through admonition and instruction. Hence many of the cruder errors of the learning process are eliminated in advance. The more drastic ex-

periences in satisfying the need for protection, and for food and sexual adjustment, are worked out in the history of the race. The individual begins the modification of his prepotent reflexes where unnumbered generations of his forbears have left off. Thought itself, in its inseparable connection with language, traditional knowledge and custom, is largely a part of the general social influence. By the direction through society of the learning process the efferent side of the prepotent reflex arcs are modified from purely individualistic to highly socialized responses. And finally, the common sanction may so far control the habits formed upon the inborn activities as to substitute for the original biological end a somewhat modified purpose of social origin.

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CHAPTER IV

FEELING AND EMOTION

The Nature of Emotion. Let us imagine a man crossing a busy thoroughfare with the consciousness of moderate safety, when, from an unexpected quarter, an automobile horn sounds loudly at his elbow. He dodges in a reflex manner away from the source of danger, and makes for a place of safety. This is the outward, or somatic, portion of the response, belonging to the class of prepotent reflexes discussed in the preceding chapter, and brought about by the cerebrospinal nervous system. There is another component, however, a visceral, or internal, response produced by efferent impulses through the autonomic system to the smooth muscle of the internal organs. Referring to Figure 7 (p. 36), we may illustrate this component by connecting the afferent neuron from *SR* with the efferent *VE*. The visceral response includes changes in rate of the heartbeat, stopping of digestive activities, and liberation into the blood of energizing products of ductless glands. There may also be effects of the sympathetic nervous system on the outer surface of the body, such as pallor and erection of the hairs. The face likewise assumes an expression of alarm, a response innervated, perhaps, by the cerebrospinal and the autonomic fibers together.

A diffuse pattern of response, invading both the somatic and the visceral regions of the body, is thus the immediate result of a sudden, unexpected, prepotent stimulus. But this is only half the story. We are equipped with receptors which are capable of being stimulated by these movements of the body and by changes within the body (see p. 18). Afferent neurons carry these excitations to the appropriate sensory areas of the cortex, a process accompanied by sensory awareness of the bodily movements and changes involved. There enter consciousness: (1) kinæsthetic sensations from the movements of the arms, legs, and trunk; (2) kinæsthetic sensations from the movements of facial expression; (3) organic

sensations from the visceral responses; and (4) cutaneous sensations from the effects of sympathetic control in the blood vessels and other structures of the skin. These sensory qualities fuse into a mass of vaguely discriminated organic and bodily experiences, which, having its focus in the interior of the body, seems to spread out and pervade our whole being. This fused complex of sensory experience is what we call an *emotion.* In the illustration used it is the emotion of fear.

The emotion does not come directly upon the perception of the danger signal, nor with the realization of its meaning. It is connected rather with the response (visceral and somatic) to the signal, and is not felt until the response is made. The emotion of fear is the way the body *feels* upon reacting to a terrifying situation. It depends upon this reaction, but it in no way initiates nor directs it. This statement of the case is called the *James-Lange theory.* Theory it is, to be sure; but it contains so much truth that it has been able to hold its ground against eminent critics. Its main defect is one of omission, in that it fails to differentiate the patterns of visceral and somatic response giving rise to the different emotions of common experience. It does not distinguish, for example, between the patterns of response capable of arousing the consciously distinct emotions of anger and fear. We shall presently suggest a theory which will remedy this defect. First, however, it will be necessary to ascertain what distinct types of emotion exist, and then take account of the physiological mechanisms at their service.

The Classification of Emotions. Introspection upon emotional consciousness reveals two characteristic facts: (1) Every emotion has an *affective element;* that is, it may be classed as either pleasant or unpleasant. (2) Every emotion has some distinctive quality by which it may be recognized apart from its affective aspect. Disgust and rage, for example, are both unpleasantly toned states; but they can be clearly distinguished in consciousness. There is, in other words, some *differentiating factor* which serves to distinguish between emotions which are alike in respect to the affective component. The principal emotions having an *unpleasant* feeling element are disgust, fear, rage, grief, and the somewhat emotional

quality of intense bodily pain. Pain and disgust are relatively simple conditions, involving little specialized somatic activity. The chief emotions characterized by *pleasant* affectivity are elation, mirth, and love both of the conjugal and consanguineal sort. The unpleasantly toned emotions, such as fear and rage, represent the return afferent impulses from prepotent activities of the avoiding type; while the pleasant states attend the preparatory or consummatory phases of the approaching activities.

The Physiology of Feeling and Emotion. If we search for some physiological mechanism suitably correlated with the antagonistic poles of pleasantness and unpleasantness, upon which our emotional classification is based, we shall find it in the autonomic nervous system and the viscera. The physiological antagonism between the cranio-sacral and the sympathetic portions of the autonomic is admirably suited to be the correlate of this antithesis of affective quality. It was stated on page 35 that these two divisions innervate the same organs, and produce in them exactly opposite types of reactions. It may now be further stated that it is the *sympathetic* portion which functions during the intense and *unpleasant* emotional excitements of anger, fear, and bodily pain. During the *pleasantly* toned activities of digestion and sex behavior, it is the *cranio-sacral* division which holds sway. It is worth while to describe these antagonistic visceral effects somewhat more in detail. They are summarized diagrammatically in Figure 10.

During the process of digestion a state of tonus is maintained in the smooth muscle which facilitates the movements required for this work. Fibers from the cranial nerves bear to the viscera the nervous impulses which produce this tonicity. The salivary and gastric glandular secretions necessary for eating and digesting are also augmented by the cranial division. Suppose now the individual sees a mortal enemy, or is faced with the fear of imminent destruction. The visual stimulus will arouse impulses which, entering the central nervous system, will be discharged through the efferent sympathetic fibers to the smooth visceral muscle. These impulses are inhibitory in character. They reduce the muscle tone of the digestive organs and bring their processes to an end. A similar inhibitory effect is produced upon the salivary and digestive

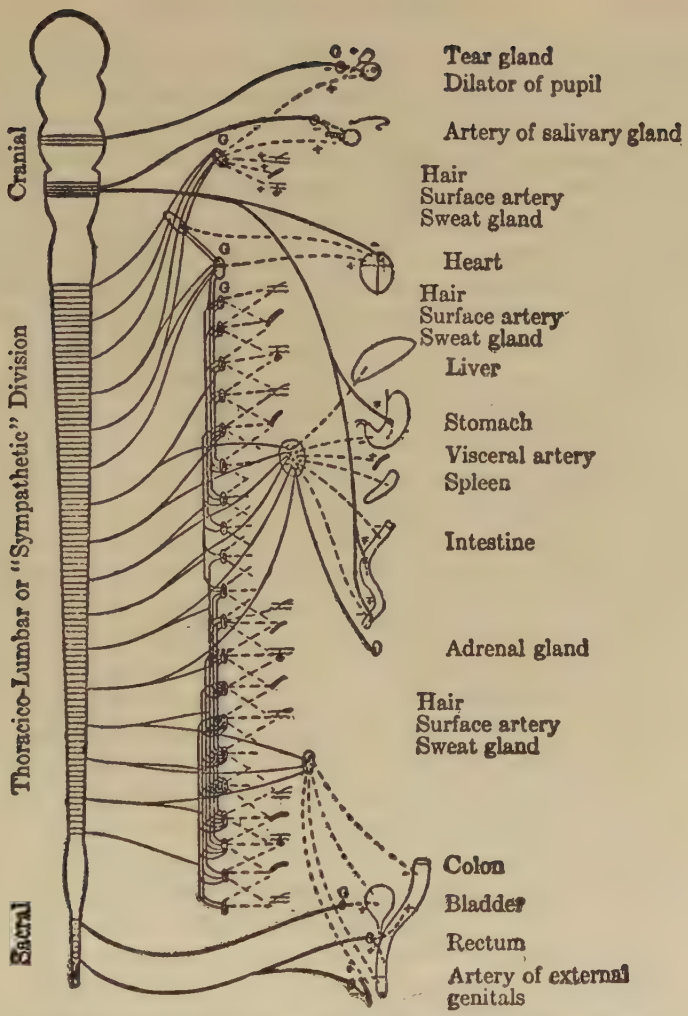

FIGURE 10. DIAGRAM OF THE MORE IMPORTANT DISTRIBUTIONS OF THE AUTONOMIC NERVOUS SYSTEM

The brain and spinal cord are represented at the left. The preganglionic fibers of the autonomic system are in solid lines, the postganglionic in dash lines. The nerves of the cranial and sacral divisions are distinguished from those of the thoracico-lumbar or "sympathetic" division by broader lines. A + mark indicates an augmenting effect on the activity of the organ; a — mark, a depressive or inhibitory effect.

(From Cannon's *Bodily Changes in Pain, Hunger, Fear, and Rage*, by permission of the publishers, Messrs. D. Appleton and Company, New York.)

glands. The parched condition of the mouth in fear, which results from the suppression of the salivary secretions, is well known.

The cranio-sacral division dilates the muscular walls of the blood vessels, thus facilitating the absorption of food materials, or allowing the external genital organs to be engorged with blood in the erectile condition necessary for copulation. In fear, anger, and acute pain, on the other hand, the sympathetic impulses dominate and drive the cranio-sacral responses from the field. The blood vessels are constricted, and the blood is driven from the interior of the body to the limbs where it is needed for violent exertion. It is commonly known that fear (for example, fear of the consequences or fear of impotence) prevents the free flow of blood to the sex organs, and thus inhibits the tumescence necessary for the sex act. Fear has likewise an inhibitory effect upon micturition, a process normally brought about by the sacral efferent fibers. Constriction of the blood vessels is accompanied by increase in blood pressure. By the use of an instrument for reading these fluctuations of blood pressure, one can often detect in a witness the presence of a fear emotion, otherwise concealed, a state usually indicative of guilty knowledge which the subject is afraid of disclosing.

The heart is retarded by the vagus nerve (cranial), and accelerated by the sympathetic, the latter effect forcing a liberal supply of blood to the arms and limbs where it is needed in the bodily struggles likely to be involved in conditions of violent emotion. The sympathetic fibers also convey impulses to the liver, releasing stored sugar so that it can be distributed by the blood to the peripheral organs engaged in combat or flight. These functions have already been described in Chapter II (pp. 32–35). One of the most important effects of the sympathetic impulses is the exciting of the adrenal glands, small bodies lying near the kidneys, causing them to pour their secretion, adrenin, into the blood stream. Professor Cannon found that adrenin acts directly upon the heart, arteries, digestive organs, and other tissues, in precisely the same manner as the impulses of the sympathetic fibers. It serves, therefore, in the strong unpleasant emotions as an aid to the sympathetic by augmenting and prolonging its effects. It helps to maintain the body "upon a war footing."

A Theory of Feeling and Emotion. It is evident that the two antagonistic mechanisms which we have been considering, the cranio-sacral and sympathetic divisions, are allied with two groups of emotions having opposed qualities of feeling, pleasant and unpleasant respectively. The unpleasant group, exemplified by pain, fear, and rage, results from bodily changes which serve the ends of withdrawing and defense, and which are brought about by the sympathetic division. There is no difficulty theoretically in concluding that all conscious states tinged with unpleasant feeling derive that feeling from the invasion of the various bodily organs by impulses from the sympathetic.

The chief pleasures of mankind, on the other hand, center about the cranio-sacral functions of nutrition and sex. The digestive operations induced by the cranial division are probably the reactions whose return afferent impulses convey much of the feeling of pleasure in eating. Salivary and other digestive reactions come by conditioned reflex to be attached to stimuli which accompany the taste of the food, such as the *sight* of the food or surrounding objects. The pleasure reaction is therefore transferred to these attendant stimuli, and our preparatory as well as our consummatory approaching reactions become fraught with pleasant feeling. The same extension applies to the pleasures of the sex life, controlled by the sacral division. The facilitating sacral discharge into the pelvic organs becomes conditioned by the *sight* of the loved one, or even by a token or remembrance, so that the pleasure reaction is habitually experienced as the affective core of the emotion of love. It is not improbable that consanguineal as well as true sexual love derives its pleasantness component in a similar fashion.

A certain exception must be made to the statement that cranio-sacral impulses underlie pleasant emotional states generally. There are several sources of pleasant affectivity, such as bodily exercise and habit, excitement of games, elation, and mirth, which possess no discoverable relation to the cranio-sacral functions, nor (with the exception of excitement and mirth) to autonomic activities of any sort. These pleasant states appear to be due to afferent impulses from reactions carried out by unimpeded *cerebrospinal* impulses. They are somatic rather than visceral in origin.

To recapitulate: Emotions are fundamentally distinguishable as pleasant and unpleasant. The first part of our theory undertakes to explain this affective basis. Finding a certain physiological process to be present in the entire group of unpleasant emotions, and an antagonistic process common to pleasant emotions, we infer that these processes form the basis of conscious unpleasantness and pleasantness respectively. *The cranio-sacral division of the autonomic, supplemented under certain conditions by the cerebrospinal system, innervates those responses whose return afferent impulses are associated with the conscious quality of pleasantness. The sympathetic division produces visceral responses which are represented in consciousness as unpleasantness.* Before proceeding to the second portion of the theory, we shall review a few additional lines of evidence confirming the hypothesis just stated.

Evidence from Introspection and Latent Period. In conscious experience unpleasantness is usually a more definite, identifiable, and imperative quality than pleasantness. The unpleasant emotions are more numerous and characteristically emotional than the pleasant. We shall observe later that they are also represented by a far greater variety of facial expressions than are pleasant states. On the physiological side there are analogous conditions. The sympathetic motor impulses are necessarily stronger than the cranio-sacral, and are prepotent over the latter. They are more widely diffused through the viscera, and they reinforce somatic motor activities of a more violent, varied, and characteristic sort.

The length of time required for arousal (latent period) is another point in the evidence. We should expect, according to the theory, that unpleasantness would be slower of arousal than pleasantness. The synapses of the sympathetic ganglia have a higher resistance than those of the cranio-sacral division. If this were not so, our digestive and other vital functions would be subject to continual interruption through minor emotional excitements. Dr. Cannon regards the sympathetic ganglia as protective barriers, which can be crossed by invading impulses only in case of unusual need for defense or escape. They are thus a protection against harmful excess of emotion. There are also longer stretches of unmedullated post-ganglionic fibers (see Fig. 10) in the sympathetic than in the

cranio-sacral division; and conduction is slower in non-medullated than in medullated neurons. These conditions — namely, greater synaptic resistance and slower rate of transmission — both indicate that the effects produced by the sympathetic fibers must be slower to appear than those of the cranio-sacral.

Common experience justifies this inference. Compare, for example, the latency of unpleasant feelings with the quick thrill of pleasure derived from pleasant tastes or erotic sensations. The case of stumbling on the stairs is a good example. In the writer's experience there is a sudden reflex recovery of balance; and then, *when several steps have been descended*, there wells up gradually a mass of unpleasant organic sensations. Annoyance and anger also have a long latent time. A characteristic non-emotive 'fore-period' has been found in extensive collections of introspection upon anger.[1] In babies a good anger cry may take as long as a half-minute, or longer, to develop. The laughter response to the pleasant stimulus of tickling is, on the other hand, immediate.

The sharp antagonism which exists between the two divisions of the autonomic, when considered in connection with the introspective oppositeness of pleasantness and unpleasantness, offers further support for the theory we are discussing. Fear inhibits pleasant emotions. And on the pleasant side the drive of sexual love is one of the strongest agencies in dispelling the unpleasant anger in family quarrels.

To sum up, we find the first part of our theory supported from both the introspective and behavioristic viewpoints by definiteness, imperativeness, latent period, and antagonistic character of the emotional responses.

How are the Emotional Reactions further Differentiated? There remains to be explained the *differentiating factor*, through which the emotions within a single affective class — for example, fear and anger — may be physiologically distinguished. Since the autonomic functions for all the unpleasant emotions are of the same type, we must look elsewhere for our distinguishing mechanism. *We propose that the differentiating factor arises from the stimu-*

[1] Richardson, R. F.: "The Psychology and Pedagogy of Anger," *Educational Monographs*, no. 19.

lation of the proprioceptors in the muscles, tendons, and joints of the somatic part of the organism; and that afferent impulses from these somatic patterns of response add to the autonomic core of affectivity the characteristic sensory complexes by which one emotion is distinguished from another of the same affective class. Somatic postures and attitudes are generally taken, or overt responses made, in nearly all emotional situations. Different, and somewhat antagonistic, somatic effector groups are brought into play according to whether the individual attacks or flees. The facial expressions as well as bodily movements are strongly differential. Return afferent impulses from these responses add in consciousness the distinguishing qualities which serve to differentiate the emotion of anger from that of fear. Without these impulses the two states would be simply unpleasant, and indistinguishable. As to the pleasant emotions, we may ascribe the differentiating factors — for example, in the various types of love — to the habits of adjustment toward the loved object. To love a baby is to fondle it, or at least to assume the attitude of fondling it, in a lover-like fashion. This is an abridgment of the complete set of responses which affords the full emotion of sexual love. In friendship the somatic component may be reduced to a touch of the hand or a half-embrace. Some facilitation of the sacral and allied mechanisms probably forms the pleasant affective core of all these experiences.

The temporal relations of the two components in the proposed theory offer some corroboration. When the objective situation arousing anger or embarrassment has been removed, the visceral component, being more sluggish than the somatic, outlasts the latter in the form of a purely unpleasant affective (not emotional) state which delays the recovery of composure. In the case of stumbling on the stair, the starting (somatic) response was completed before the sympathetic affective component was felt. The emotion, therefore, was not true fear, but simply an intense unpleasantness. When an animal or a child is pursued and brought to bay, the shift from intense fear (in flight) to intense rage (in attack) is too sudden to admit of a complete change in the visceral pattern. We may plausibly attribute it to the quicker change in the response pattern of the striped muscle, superimposed upon the

constant visceral undercurrent of unpleasant affectivity. Bodily pain and grief also pass quickly into anger through a change in the nature of the somatic responses.

Evidence from Genetic Development. The emotional states of the newborn baby appear to be undifferentiated. Judging from behavior alone, they have no further character than pure unpleasant affectivity. The first prepotent stimuli which act upon the infant are usually those for which the somatic responses are diffuse and undifferentiated. Internal pains of hunger and colic, and unfavorable temperatures, are among such stimulations. The somatic responses, crying, kicking, etc., are the same for all of them. At the beginning, therefore, of the life of feeling there is little to differentiate the emotional states beyond the mere qualities of pleasantness and unpleasantness. The child has feelings of unpleasantness, but not yet definite unpleasant emotions. We may call this simple, unpleasant experience of the newborn the 'protopathetic' state. The *affective* component, then, is not only the fundamental basis of classification, but also the most primitive ingredient of human emotion. Before long (probably as soon as the appropriate stimuli are brought to bear) the child brings into play the various prepotent somatic responses, such as struggling, rejecting, and withdrawing. Thus the differentiating factors are added to the sympathetic pattern, and anger and fear emerge as distinct emotions.

Conditions Favoring the Arousal of Unpleasant Emotions. A fuller comprehension of the subject may be obtained by stating the neural conditions necessary for the arousal of the unpleasant emotions. The discussion will, at the same time, be brought more definitely into the social field. The conditions referred to are those which help in breaking through the high resistance of the sympathetic synapses and sending inhibitory impulses to the smooth muscle. (1) The first condition is that of the intensity of the stimulus. Almost any sensation becomes unpleasant if it is made sufficiently intense for the energy of the impulse to cross the sympathetic threshold. The peal of thunder continues to arouse fear throughout adult life. Our theory at this point offers a good basis for distinguishing physiologically between pains which are unpleasant

and those which are not. It is well known that light pains on the skin are far from unpleasant. Unpleasant pains are severe ones: their efferent impulses are powerful enough to break through into the sympathetic. The same consideration explains the pseudo-emotional quality often ascribed to intense bodily pain. (2) Repetition or insistence, such as repeatedly touching on a 'sore point,' or the neural summation of petty annoyances in producing anger, is another condition favoring the arousal of unpleasant emotion. (3) Suddenness of the stimulus, or lack of proper somatic adjustment of the cerebrospinal system, often causes the impulse to be discharged through the sympathetic efferents. The fear aroused by the strange, the uncanny, or the extraordinarily large (that is, objects toward which we have no developed habits of response) belongs in this class. (4) Blocking of the usual somatic responses to the powerful drives, such as those of food and sex, usually through social agencies, is a potent factor in bringing about an invasion of the sympathetic. Thwarting of the vital needs, as in industrial conflicts, evokes not only overt struggle reactions, but also violent emotions of fear and anger. Grief results from blocked, or thwarted, love reactions in situations where overt responses, such as attacking others, would do no good. (5) Finally, the state of visceral tonus or preparation may be an important factor in lowering the sympathetic threshold and increasing unpleasant emotionality. Irritability, and other emotional attitudes indicate a permanent lowering of the resistance. Transitory effects, or moods, also increase susceptibility to fear or anger. When feeling fine, a baby will enjoy a vigorous roughing which at another time would throw him into a fit of rage. Petitions for money are tactfully withheld from the *pater familias* until the close of a good dinner.

Complex Emotional States in Social Behavior. The foregoing account has dealt with the physiology of the more elementary emotional reactions. Our subjective lives, however, would be of a primitive sort if we were limited to these few basic types. There are many *nuances* of feeling which comprise a large number of combinations of the elementary emotions under varying conditions. There are, moreover, states in which both pleasant and unpleasant

elements may be identified. A simple object or situation acting upon a limited area of smooth muscle can, of course, produce but one type of affective response, either pleasant or unpleasant. If the control is assumed by the cranio-sacral, the antagonistic sympathetic effects are inhibited, and *vice versa*. If, however, the situation is complex, that is, if we are apt to respond with varying reactions to different aspects of it, we may expect that certain regions of the viscera may be under the control of the cranio-sacral, while other regions will have been invaded by the sympathetic impulses. The result will be a mixed emotion, containing representatives of both the pleasant and unpleasant divisions of our classification. Grief is an example of such an emotion. It contains (1) the pleasant feeling-tone of the love reaction, and (2) the unpleasant thwarted feeling of sadness because it is impossible for the habitual love response to be fully carried out. This explanation of 'mixed' emotional states is, of course, purely tentative. Since it affords a possible manner in which to conceive the physiological factors, it may be useful in our present lack of more precise knowledge.

There are many complex emotional states which are familiar in daily life. Varying degrees of the affective qualities combine with the major emotions of fear, anger, and love, and also with somatic attitudes for all possible reactions toward self and others. The main attitudes in which *fear* seems to be important are awe, reverence, bashfulness, surprise, wonder, suspicion, loathing, and anxiety. *Anger* is recognizable in resentment, remorse, jealousy, envy, reproach, scorn, and hatred. *Love* plays a part in gratitude, grief, pity, sorrow, fascination, and perhaps humility. A number of bodily attitudes, other than attacking, fleeing, and caressing, combine with pleasantness and unpleasantness to produce special emotional reactions. These states are represented by numerous varieties of approach and avoidance, as well as by joy, elation, pride, conceit, shame, domination, submission, and feelings of inferiority.[1]

The range of human feelings is indeed extensive. There are

[1] For a more complete subjective analysis of the complex emotions the reader should consult Professor McDougall's *Social Psychology*, chs. 5 and 6. It is interesting also to try to analyze the components of these complex states in the corresponding facial expressions (cf. Chapter IX).

probably hundreds of *nuances* of emotional attitude which contribute to the richness as well as the delicacy of social intercourse, Modern fiction is primarily a play upon these attitudes. They are of interest for social psychology because they indicate the complexity of inter-individual adjustments in society. Almost every emotional *nuance* represents an attitude not only to feel but to react in a highly specific fashion toward some other human being.

The Social Conditioning of Emotional Response. A certain college professor relates a story of an unaccountable liking which he took for a man in whom he could discover no qualities to merit such affection. Upon analyzing this feeling, he fancied that it was chiefly the peculiar chuckle of the man that attracted him. This clue led to the recall of a former roommate of college days with whom the professor had spent many a pleasant hour. The roommate had possessed a chuckle almost identical with that of the new acquaintance. We find here the mechanism of the conditioned response in the emotional sphere. The pleasure responses experienced with the roommate had been attached (transferred) to a particular social stimulus which was present at the time, namely, the sound of the chuckle. This conditioned emotional reaction persisted for years and formed the basis of a new friendship upon purely emotional grounds. Many, if not most, of our likes and dislikes in first impressions are due to similar transfers of feeling through identical elements of social stimulation. Our pleasure at seeing old classmates is like that which we experience in revisiting the haunts and byways of childhood. We are led back through the present stimulus to the old, but not obliterated, habits of emotional response.

Fetishes and other tokens operate upon human feelings by the same principle of conditioning. The savage attaches to an effigy all the awe and mystery which he feels for the spirit it is supposed to embody. To a lover a lock of hair is sacred because it calls forth a wave of tender feeling of the same kind as that evoked by the entire person of the beloved. For the same reason wedding gowns are treasured, and attics are filled with trunks lined with keepsakes and similar hoarded treasures.

Sentiments are another important class of conditioned emotions

and attitudes. The political orator has only to mention the 'orphan children' or the 'rights of the people' to reduce his audience to a state of tender compassion or righteous indignation. The names of national heroes, the standard of colors, slogans such as 'Liberty' and 'Equality,' and reiterated lofty ideals are great rallying points for the popular emotions. The spoken word is here used to evoke all the feeling associated with it through ages of tradition and custom. As a means of social control, whether for good or for ill, this arousing of sentiment through language stimuli is a process of inestimable significance.

The Control and Direction of Emotion as a Social Problem. Professor Cannon has pointed out the energizing effects of emotion, if not too extreme, upon the bodily activity which the situation demands. Through the sympathetic impulses, and especially through adrenin, the effects of fatigue are removed, metabolism increased, and the whole body energized to a degree unknown in calmer moods. These 'unknown reservoirs of power' are, however, more of an asset to primitive than to civilized man. They are Nature's provision for strength in the violent emotions attending pursuit and flight and mortal combat. The needs of civilized society are of another order: physical struggles and the violent emotions which accompany them are a menace rather than a benefit to modern man. The anger emotion cannot be used to support overt violence, because we must repress this form of reaction in favor of a more socialized 'competition.' We cannot even yield ourselves to fear and precipitate flight regardless of the consequences to others. On every hand we find that the needs of society have set up barriers to those exertions in which the visceral components of emotion raise the body to its highest level of attainment. It is only in such abnormal and destructive phenomena as wars and racial and industrial riots that the primitive fury of the emotional energy can fully expend itself. While endowed, therefore, with a capacity for highest efficiency in war, civilized man is normally committed to a régime of peace. How can we reconcile these opposed requirements and utilize the emotional reservoirs of energy for constructive purposes? This is one of the greatest social problems.

It is not only for the acquisition of power, the superman ideal, that the emotional problem is a socially important one. At many points the social pressure is so great as to threaten *all* activity through which the emotion may find its release. If somatic responses are totally inhibited, the visceral energizing effects can be discharged only inwardly. There is produced an extended, intensified, and lasting state of unpleasant internal feeling. If social and familial ties are too strong, there will result a complete blocking of overt anger release, leading to the development of an introverted, moody, and ineffective personality. Love emotions are often iniquitously repressed by austere social influences. In this case auto-eroticism, erotic day-dreaming, and symptoms of neurotic dissociation may appear. How shall we steer successfully between the evils of anti-social violence and libertinism on the one hand, and the suppression of the life processes of the individual on the other? This is a second great problem in the field of social adjustments.

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CHAPTER V

PERSONALITY — THE SOCIAL MAN

Personality is largely a Social Fact. Our method in the preceding chapters has been mainly analytical. We have attempted to reduce human behavior to its fundamental terms, and have found these terms to include prepotent reflexes, habit formation, thought, and emotion. These mechanisms furnish us with suitable principles of explanation. It is now desirable to shift our emphasis from explanation to description, and to study, not the mechanisms themselves, but the character and efficacy of the adjustments which they produce in operation. We shall be concerned not so much with the manner in which emotion takes place as with its frequency, strength, and manner of release in a given individual. Habit formation as a process will not interest us so much as what particular habits are formed in the service of the life adjustments, and what are the chief drives behind their formation. In a word we shall select certain fundamental aspects of behavior and describe them with a view to an evaluation of the person as a whole. These aspects may be called *traits of personality*. Our approach will be synthetic in that it brings into relation the various traits and capacities of the individual, and shows how they combine in the complete integration of his behavior. It will also be differential since personality traits may be considered as so many important dimensions in which people may be found to differ.

Evaluation and measurement take us immediately into the social sphere. There is no accurate standard of measurement except that afforded by the individuals of one's acquaintance. The individual must be evaluated by some one other than himself, for self-estimates have proved unreliable both in experiment and in daily life. Thus, although the physiological basis of personality traits lies wholly in the individual, the traits themselves can be described and measured only by a scale standardized within the social group and applied by social agencies.

More than that, many of the characteristic reactions to be judged

TABLE I. FOUNDATIONS OF PERSONALITY

PHYSICAL BASIS IN THE ORGANISM	RESULTING BEHAVIOR TRAITS
1. NATIVE ENDOWMENT	
a. Capacities (cortical factors, plasticity of nervous system)	Intellectual Activities Skill in Special Activities
b. Physiological Characteristics	
Somatic (speed of reaction, threshold of action, co-ordination)	Traits of Movement
Visceral (autonomic threshold, visceral tonus, glandular activities)	Traits of Emotion and Mood
c. Morphological Characteristics (Size, weight, and proportions of body, texture of hair and skin, beauty, ugliness, strength, defect, deformity, etc.)	(See under Habit Systems)
2. ACQUISITION	
d. Habit Systems	Drives and Trends of Habit Reactions toward Self and Others Compensations and Provisions for Peculiarities of Endowment (capacity, size, speed, energy, defect, etc.) Socialization and Character

are evoked only through the social environment. A man's self-assertion, submission, quickness of temper, suspicion, pride and inferiority are all dependent upon the existence of other human beings toward whom these attitudes may be displayed. His refinement, tact, and morality could not have come into existence without social instruction and control. The hermit exhibits little personality, except in the sphere of pure intelligence. The social side of his nature, while latent as a physiological possibility, remains unexpressed because his solitary environment contains no stimuli adequate for evoking it. With the exception of a few traits, personality may be defined as the individual's characteristic reactions to social stimuli, and the quality of his adaptation to the social features of his environment.

In its genetic development, also, personality is dependent upon social contacts. Only recently have we realized the importance of the early influences of parents and other relatives in the formation of lifelong attitudes toward self and society. Personality is therefore a result of social behavior. But it is also a cause. The leader controls human actions through the display of those traits which we subsume under the term 'personality.' At every point our peculiarities of mood and habit serve as stimulations significant for those about us, and determine the character of adjustments between them and us. The problems also of personality and its distortion and defect are essentially social problems. Mental defect and insanity may be partially defined as inability to adapt one's self to the conditions of the society in which one lives. Criminality presents the same problem in an extreme form. Both diagnosis and treatment follow largely upon the lines indicated by the anomaly in the field of social behavior.

With the study of personality we therefore advance toward a distinctly social viewpoint in our consideration of the individual.

The Individual Basis of Personality. Coming to a closer view of the subject, we must inquire concerning the organic foundations upon which the salient traits of the individual are built. Two main sources of personality may be mentioned. The first is the *native physical endowment* of the individual, which includes the qualities of nervous tissue underlying intelligence, physiological characteris-

tics as exemplified by speed of function in nerve and muscle, levels of visceral and glandular response, and finally such simple anatomical aspects as stature, beauty, deformity, and the like. While some of these qualities may be influenced by environmental conditions (use, accident, disease, etc.), they are for the most part ascribable directly to the native constitution of the individual and the laws of growth. The second group of personality-forming elements are the *systems of habits* developed in the process of adjusting an individual of given physical endowment to his particular environment. They are the result of capacities and physical characteristics operating under the laws of prepotent reflex modification and learning. An intimate connection between native endowment and habit formation probably exists in the developmental trends of every personality. Level of native capacity may determine whether one shall learn a profession or a skilled trade. Visceral factors may direct a lifelong interest in art or other emotional pursuits. Special bodily defects frequently give rise to strong habit trends in the direction of overcoming them or compensating in other ways. Height and strength may contribute decisively to traits of leadership, while submissive habits commonly attend an inferior physique. Unconsciously Nature affirms in each personality her adaptive principle of making the most of what the organism has. A convenient summary of the elementary factors of personality is given in Table I.

The Selection of Traits. We are to regard traits, then, not as elementary psychological mechanisms, but as groups of characteristic reactions based upon native constitution and systems of habit, and selected for observation as exhibiting the typical adjustments of the individual to his environment. Under what traits shall we classify human personality? The selection is largely a matter of expediency, governed by the theoretical or practical aim in view. The chief requirements are that the traits selected shall be both fundamental in importance and mutually exclusive in scope. An attempt has been made to conform to these principles in subsuming the traits of personality under the five categories of intelligence, motility, temperament, self-expression, and sociality. Table II presents the complete list.

TABLE II. TRAITS OF PERSONALITY

1. INTELLIGENCE
   - Problem-solving Ability
   - Memory and Learning Ability
   - Perceptual Ability
   - Constructive Imagination
   - Special Abilities
   - Soundness of Judgment
   - General Adaptability

2. MOTILITY
   - Hyperkinesis — Hypokinesis
   - Impulsion — Inhibition (Control)
   - Tenacity
   - Skill
   - Style

3. TEMPERAMENT
   - Emotional Frequency and Change
   - Emotional Breadth
   - Emotional Strength
   - Characteristic Mood
   - Emotional Attitude

4. **SELF-EXPRESSION**
   - **Drive**
   - **Compensation**
   - **Extroversion — Introversion**
   - **Insight**
   - **Ascendance — Submission**
   - **Expansion — Reclusion**

5. SOCIALITY
   - Susceptibility to Social Stimulation
   - Socialization — Self-Seeking (Aggression)
     - Social Participation
   - Character

Intelligence. Given equal opportunity and training, two individuals will often be found to differ considerably in the success which they achieve. There are two factors at work here, namely, native capacity (or intelligence) and drive, or habitual trends of effort in the direction of accomplishment. In almost every schoolroom one may find among the highest scholars both those of high intelligence, and those of mediocre gifts but maximum industry; and among the lowest both the intellectually dull and those lacking in drive toward scholarship. The nature of drive will be discussed in a later section. Intelligence may be broadly defined as the capacity for solving the problems of life. Stated in less behavioristic terms, it is the capacity for reasoning. *Problem-solving ability* enables its possessor to advance beyond the stage of crude trial and error in overt manipulation of objects, to the use of symbol reactions. These symbol responses usually take the form of implicit sub-audible word reactions, the use of which is sometimes referred to as "conceptual thinking." The manner in which the symbol activities are substituted for outward bodily movements, and the resulting economy in the solution of problems, have been explained in Chapter III. The degree of facility in the use of this method is one of the best criteria of intelligence.

But in order to think in terms of symbols, the symbols must acquire meaning. They must epitomize the entire past experience of the individual in regard to the situation in which they are employed, and must have associated with them all the appropriate reactions of approach and withdrawal which have been learned in the past events which they symbolize. Problem-solving thus necessarily implies *memory and learning ability*. It is by the use of past experience that an intelligent person guides his reactions toward future contingencies. Ability to learn and to profit by what is learned is another way of stating the nature of intelligence.

There are other capacities which are closely allied to the main function of problem-solving, and perhaps not clearly distinguishable from it. We cannot react intelligently to a situation unless we have a clear grasp of all its details. Capacity for observation, or *perceptual ability*, is therefore important. *Constructive imagination* denotes the ability to work out a plan or design an object or a

work of art apart from the immediate possibilities present to the more routine type of mind. To create something new involves more than ordinary facility in the imaginative play of implicit reactions. This capacity has its social significance in the work of the genius and the inventor. Finally we must include, on the side of capacity, the individual's *special abilities*. These seem to lie apart from the general intelligence level, and form unique outlets through which vocational endeavors find expression. The mathematician, the artist, the engineer, the orator, and the business promoter all find unique ways of solving the problems of life adjustment through the special abilities which they possess.

Two other traits may be distinguished within the broad adaptive field of intelligence. One of these is the capacity for making a mature decision in a crisis. We may call this *soundness of judgment*. Many a person who might be rated as 'quick' and 'clever,' according to the 'pencil and paper' intelligence tests in present vogue, fails in situations where a calm and mature outlook upon the real problems of life is required. Age and experience surely contribute to the original capacity for adaptation. The other trait referred to is *general adaptability*. Its field of application is broader than the problems of reasoning, imagination, and judgment already described. The latter qualities might all be exhibited in the solitary struggles of a shipwrecked mariner; but general adaptability includes adjustment to the social group, its persons, and its laws. Tact, susceptibility to social influences, coöperation, congeniality, and enthusiasm are phases of this broader adjustment. General adaptability, then, means the combination of the narrower intellectual capacities with social traits in the problems of biological and social adaptation.

Motility. In this category are included the readily observed motor characteristics such as speed, impulsiveness, control, steadiness, and skill. Our table includes only those traits which are prominent in the social contacts of an individual. The general activity level is the first consideration. Some individuals are always bustling, talking, romping, and rushing through their duties and pleasures at a great rate. The threshold for action is low.

Any stimulus is likely to set them off. Such a person may be termed *hyperkinetic*. The opposite extreme is the taciturn, slow-moving, inert individual, whose threshold of adequate stimulation is high. This is the *hypokinetic* type. There are, of course, many intermediate grades of activity level.

Impulsion and *inhibition* must be distinguished from the traits just described. Hyperkinesis is a condition of readiness for activity. It is merely a state of absence of inertia. Impulsion implies a positive tendency to action of a vigorous sort, capable of overcoming resistance. Hypokinesis is a condition of inertia in which the threshold for all activities is raised. Inhibition, on the other hand, is a tendency to block the release of *certain* motor impulses. A person may thus be active either through absence of inertia (hyperkinesis) or through powerful impulsions. One may also be inactive either through presence of high inertia (hypokinesis) or through the restraint of inhibitions. The hyperkinetic inhibited type and the hypokinetic impulsive type are also known. Some writers — for example, Professor June Downey — regard inhibition as a more constant trait of *ability to control* one's movements. Whatever name we may assign, this ability is important in our survey of the personality. From another viewpoint inhibition of response is connected with repression and the emotional life.

The remaining motility traits are more readily described. *Tenacity* is the persistence in a certain line of activity in the face of obstacles and discomfort. 'Will power' is the term popularly employed, especially when the tenacious behavior takes the form of resisting an evil habit. The conception involved is, however, superficial and unscientific, since the very same trait is labeled 'stubbornness' when the line of conduct persisted in does not meet our full approval. *Skill* should be qualitatively as well as quantitatively described. It is based upon some general native capacity highly specialized by habit formation, fineness of coördination, and motor control. Individuality in the execution of one's work may be termed *style*. The compositions of Chopin and the poems of Browning are unique expressions of the personalities of their creators. So for that matter are the hats of our favorite milliner and the 'delivery' of a celebrated baseball pitcher. The trait of style

is probably one of the most complex in the entire personality. It often reaches back to earliest childhood. The writer knew two brothers who when children were rivals in toy-making. One of them always made his toy tall and graceful, while his brother's product generally turned out to be squat and stalwart. No occupation is so humble or so limited that it does not possess some opportunity for self-expression. Style may emerge as a kind of compensation for the drabness of routine existence. It is an embellishment of reality. The very narrowness of the gamut available to the kettle-drummer in the orchestra may lead him to elaborate each movement and flourish to the limit of their rhythmic possibilities.

Temperament. Feeling and emotion are the main constituents of personality on the subjective side. They have dynamic value for overt behavior in the mechanisms of reinforcement and repression. Most individuals have a characteristic emotional level. The leading question concerning a particular person is, "What part do emotions play in his daily life?" Is he choleric or phlegmatic? Are his fits of anger, excitement, and eroticism so great that they are either uncontrollable or else controlled with obvious effort of repression? Is his daily work enlivened and energized by imaginative feeling, or is he a humdrum plodder? With what equanimity does he face success and failure, praise and blame? There are three dimensions in which the emotional level may be estimated. The first is the time factor, *emotional frequency and change*. Is there a continuous high potential of emotion? If not, how frequent are the emotional upsets? How rapid is the succession or alternation of moods? Changes from elation to depression and back again are cycles common to emotional individuals.

The second dimension, *emotional breadth*, denotes the range and variety of objects which arouse one's emotions. There are many transferred emotional reactions (conditioned responses) which are released as substitutes for the original but repressed reaction. The cat or dog, the garden, and the sentimental novel afford outlets of the tender emotions and sex interests of bachelors and spinsters. Objects of this sort are sometimes spoken of as 'loaded' stimuli.

They are surcharged with affection for the individuals concerned. Unusual fears and aversions, caused by emotional conditioning, likewise have their significance as permanent traits of personality. Adolescents yield emotional responses to fellow beings, animals, flowers, stars, and in fact the whole universe. The social environment is one of the best fields for exhibiting the trait of emotional breadth. To some individuals every human being is either black or white, every acquaintance is a subject either for eulogy or for vituperation. Others regard the world and all its creatures as a placid matter of fact. The third dimension of emotionality is *emotional strength*. Great emotional frequency and spread may denote only a superficial affective reaction. The undemonstrative man, on the other hand, sometimes has the most profound love for his children and the most bitter and vengeful hatred toward his enemies.

Quality as well as quantity of emotion merits a place in the description of personality. Some individuals have a *characteristic mood* on the affective side. They are permanently of a gloomy or of a cheerful disposition. If we add to mood the differentiated emotions combined with habitual 'settings' for response to the social environment, we have the trait of *emotional attitude*. Suspicious, timid, embarrassed, over-sensitive, and self-deprecatory persons are familiar examples of this class. Other instances are the irate parent, the pompous dignitary, the 'masher,' the cynic, and the snob. While mild emotional attitudes accompany the thought and action of nearly every one, these extreme forms are more unusual. When they become permanent, they are marked traits of personality, and lend themselves readily to caricature.

Self-Expression. Intelligence, motility, and temperament represent the innate capacities of an individual and his peculiar organization and function of nerves, muscles, and glands. In order fully to understand personality it is necessary to inquire how these peculiarities influence the actual life adjustments. What trends of behavior result from the use of special talents? How are defects and limitations atoned for in the vital struggle? What is the fundamental attitude toward self, toward the social sphere, and toward

reality? We enter here upon a field of traits at once dynamic and fundamental — they are the traits of self-expression.[1]

Drive. Not infrequently one encounters a personality for which there is a definite key word. All trends of effort seem to be focalized upon a single goal. The personality of Columbus was integrated toward the achievement of circumnavigating the globe, that of Alexander the Great toward world conquest. Lincoln stood for the preservation of the Union. Evangeline Booth and John Wesley were actuated by the desire for the religious redemption of mankind. Humbler and commoner examples are the community leader, the garret poet, the miser, the local politician, the book collector, and the missionary. The passion for renown, for wealth, for power, for antiquity, or for souls makes up the theme of their lives' histories.

Such focalization of effort is, however, by no means universal. Probably the majority of people live lives of vegetative satisfaction. Their unelaborated prepotent trends of food, sex, and protection afford only the most rudimentary and unorganized drives. We might speak of them as 'bread-and-butter' drives. They form the opposite extreme of the scale from the great leaders and reformers.

The physiology of drives is obscure. The fundamental activities, discussed in Chapter III, seem to be all-important. The original motive power arises from one or more of the prepotent reflex groups. Early in life a habit is built upon these reflexes by the usual learning processes, which, because of its high adaptive value and affinity with the special talents of the individual, acquires a widespread and basic position in the action system. It takes on a seeming prepotency of response upon presentation of the stimulus.[2] Since it began to form in the individual at an early age and gradually and unconsciously penetrated his whole life, it is considered by him to be an end in itself. He places it in the same category with food and sex interests, and mistakenly considers it to be an instinctive part of his nature. It behaves like a prepotent reflex also in that anger is aroused if its operation is thwarted. A drive may therefore be defined as a prepotent habit, or group of habits, which

[1] Because of their importance these traits are printed in heavy type in Table II.
[2] Cf. the discussion of manipulation on p. 66.

acquires a compelling power similar to that of the prepotent reflexes, and which controls the integration of other habit systems in the individual's development.[1]

The factor of *special ability* in the formation of drives must be given due recognition. The boy tries his hand at one occupation after another without making a permanent selection. Finally he chances upon some pursuit in which he shows marked capacity both in speed of learning and in perfection of the final performance. This activity is then chosen, often unconsciously, as the means of satisfying the demands made by the prepotent reflexes. The habits of that occupation are strongly fixated because of their success in fulfilling these demands. On the conscious side there is pleasure and elation. The youth is happy in having found his work, and in the opportunities which it holds for advancement for one of his particular talents.[2] Vocation and drive coincide in a case of this sort, and vocation may therefore be taken as one of the self-expressive traits of the personality. Individuals who are entirely lacking in special abilities, or who have not found the work for which their talents are adapted, will show little drive in connection with their daily occupation. Avocational drives, such as interest in sports or social life, may develop instead.

Another source of drive at work early in life is the example of a favorite parent or older friend. The interest or vocation of the dearly loved parent frequently becomes the drive of the child. Questionnaire reports collected by the writer reveal a striking influence exerted through such childhood or adolescent *rapport* with elders. We shall return to an explanation of this process in Chapter XIV.

[1] A good example of drive in occupation is seen in George Eliot's *Silas Marner*. The Weaver of Raveloe had three distinct periods in his life. He was successively the religious zealot, the miser, and the fond guardian of Eppie. In each period a distinct set of prepotent habits, or drives, predominated; and in each period his personality was unique.

[2] We are indebted to Professor R. S. Woodworth for pointing out the importance of special abilities, and their relation to interest. (*Dynamic Psychology*, pp. 66–76.) We can scarcely agree, however, with his statement that there are specialized innate capacities, each furnished with an *instinctive* 'affect' or interest which provides the drive for its use. Innate ability is probably much more general in character, and represents simply a facility in *learning* a particular set of habits. Interest as a driving factor arises from the autonomic activities involved in the prepotent reflexes.

The major drives of human beings are too numerous for complete description. Personal ambition plays a part in most of them. Among the more common are wealth, social influence, power, literary, scientific, and artistic eminence, politics, machinery, marriage and family, home improvement, reform, charity, and religion. There are also minor drives such as the principles which one formulates to one's self and tries to live by. Here belong neatness and punctuality as drives; also care for detail, sense of honor, chivalry, and cleanness of speech. Less consciously recognized, but important as minor drives, are methods and habits of work, and the balance afforded through diversified recreations and exercise. Integration of drives, and subservience of the minor ones to the major, are essential for human efficiency and happiness. To be a man of many interests does not necessarily mean to be a man of scattered efforts. Habits of dissipation and indolence sometimes coexist with the keenest of personal ambitions. An individual so divided within himself spends in fighting his own insubordinate drives the energy which he should use in the pursuit of his primary interest. In other individuals we find a self-inculcation of excellent habits in the interest of the major drive, leading to a hierarchy of harmonious drives in the total integration of the personality.

Compensation. The course of drives does not always run smoothly. Frequently they encounter obstacles and defects in the physical, intellectual, or social sphere. A young man ambitious for leadership may be handicapped by an inferior physique, or a social climber by an inconsequential genealogy. A maternally inclined young woman may be thwarted by marriage to an impotent husband. In this type of situation two general alternatives are possible, a successful and an unsuccessful one. To take the unsuccessful adjustment first. A solution may be sought in a retreat from reality, and by imagining *within one's self* that the longed-for conditions truly exist. Thus the social aspirant may build up a fictitious ancestry by fooling himself into accepting a chance similarity in names as significant. The youth may imagine himself swaying multitudes by his eloquence; and the childless woman may fancy herself going through all the stages of motherhood. A frail, neurotic student of the writer's acquaintance has day and

night dreams of physical prowess. He sees himself in a football game kicking field goals from any angle of the field, and 'shooting fouls' in basket-ball with his back toward the basket!

This type of solution is tragically futile. It has another variety, almost as ineffective, in rationalizing an ideal out of the difficulty. The physical weakling affects a lofty, intellectual existence, and regards the life of the philosopher as infinitely above that of the common herd. A certain class of discontented people refer to themselves as "poor but honest," implying, no doubt, that the possession of wealth necessarily brings with it the taint of dishonor. Defects of stature produce interesting rationalizations. H., an undersized young man, reported to the writer certain false attempts at adjustment which he had later 'seen through.' He expressed contempt for the 'frivolity' of modern dancing; his real, though at the time unconscious, reason being that he could not bear the thought of dancing with girls who were taller than himself. In addressing a taller person he would rise on his toes. He likes to walk with men who are shorter than himself, or else with abnormally tall persons. The comparison in either case is comforting to himself. The defect in these cases is rationalized and the real emotion repressed; but it still rankles because its cause is actual, and the individual has not faced the reality, but has evaded it. An allusion to the defect therefore touches a 'sore point,' and arouses the whole emotional complex of inferiority. The short person described had five fights while in the army over the use of the term "Shorty," and was whipped in four of them.

But Nature has provided a more hopeful solution, and this is the second alternative referred to. The individual may face his limitations squarely, and may develop a *compensatory drive* of surmounting them, not by falsification and defensory attitudes, but by some form of overt adjustment. There are two general forms of compensation, the direct overcoming of the obstacle, and, where this is impossible, the selection and pursuit of other methods of reaching the goal. The first form, which we may call *compensation in kind*, is illustrated by Demosthenes who struggled so hard to overcome his defect, stammering, that he not only succeeded but won enduring fame as an orator. A successful promoter of popular money

raising campaigns was asked how he came by his unusual ability and tremendous energy in this field. He replied that as a child his only playmates were two brothers older and more robust than he. In order to share their fun he had to force himself, at the cost of severe effort, to keep their pace. Youth and frailty were thus compensated for by the development of a trait which persisted and determined the successful career of the adult. In a similar way poverty and responsibility are the limitations which develop the personality of the self-made man.

The second form of compensation is *vicarious* in its function. If one road to happiness is blocked, it is possible to find another. Very plain women are often noted for adorable dispositions. This is due in many cases to the self-inculcation of desirable traits from early youth — traits which serve as an effective substitute for good looks in the competition with the fairer aspirants for matrimony. Defect in one sphere is compensated for by the development of serviceable habits in another. High standing in school, as we have already observed, is often achieved by perseverance substituted for intellectual capacity. Social contacts provide a useful sphere for vicarious compensation. Many persons of mediocre intelligence hold enviable positions through the substituted traits of forcefulness, congeniality, and tact. Every great loss or restriction brings about in the compensating personality a reorientation toward life, and a replacement of impossible methods of satisfaction by possible ones. The childless wife and the spinster may turn to some form of social service. In this they find an interest or point of attachment for the love emotion and the protective responses of the motherhood which was not to be. This class of vicarious compensations has been described by Dr. F. L. Wells under the name of "balancing factors." [1]

Compensatory traits occur in probably one half at least of normal humanity. They are not always pure compensations, according to our definition, but are frequently combined with rationalization ('sour grapes' philosophy) and defensory attitudes against loss of self-esteem. The writer in collecting personality reports from a class found compensations recognized and described in one third of

[1] See reference cited at the end of this chapter.

the students. There were probably many more instances below the conscious level. A taunt, or slight, showing that others are aware of one's defect, is sometimes a spur for the development of the behavior trend. One young man traced the origin of his present studious habits to the following episode: After floundering dismally through his high-school course, he was informed by his disgusted father that "he [the youth] was too dumb to go through college in five years, let alone four." The result was that during his entire college work he had totally reformed his habits of study, with the resolute purpose of getting through in *three* years. This tendency to over-correction is typical of the trait of compensation. An aggressive and dominant young woman who loves competition in any form reported that this trait was established in early childhood owing to the taunting behavior of her elder sisters. They were continually remarking that "of course E—— could not be expected to do so and so, as they were doing, because she was too little."

One case, that of subject G., is especially instructive in that it combines vicarious compensation with rationalization and a paradoxical masklike trend of social behavior. Previous to the self-analysis and report, G. was an enigma to the writer. He was obviously superior in intelligence, but in the social virtues he was sadly deficient. He displayed a marked bravado and cock-sureness, caring nothing for the opinions of others; and he was blunt to the extent of ill manners in his criticism of both textbook and teacher. Though all respected his ability, he had no friends among his classmates. It is hard to believe that the origin of these traits was extreme shyness and sensitiveness. Yet such was the case. As a child he could not bear to be laughed at; and his very sensitiveness and self-consciousness made him an object of playful ridicule among his playmates and elders. The result was that he withdrew within himself, and gradually built up a defensory wall of asocial behavior. Society was at first his tormentor and enemy. Then he developed a superior indifference to it, and took every occasion to show this attitude in his outspoken criticisms and eccentric ways. At college his life was that of an unpopular recluse. If his nature was bitter, however, it was also strong. His self-recognized compensation for

unpopularity was academic standing. He worked assiduously and obtained high grades so that he "could cram down the World's throat that that poor stick whom nobody likes can get high marks if he cares to take the trouble." (The inference being, no doubt, that he did not consider social graces worth the trouble, or he could acquire them also.)

Extreme shyness in adults is often concealed by a defensory mask of reclusiveness. There is no warmth in their greetings, and they seem to shun rather than solicit contacts with their fellows. The mask is frequently misinterpreted by others as indicating brusqueness, coldness, or even snobbishness. Unpopularity is the result, and the subject, sensing the aversion of his fellows, draws more closely within himself, and increases his isolation from the social environment. The defensory trait is thus ingrained through a vicious circle. Such was the case with G., with the added complication that the asocial mask became in time a part of his *true self*.

We thus find in individuals the most intricate blendings of compensation with rationalization and the erection of barriers which falsify reality. The criteria for true compensatory traits are four: (1) these traits originate from an obstacle, defect, or limitation; (2) they further the adjustment of the individual, not by trying to adapt reality to his own peculiarities, but by adapting his capacities and traits to reality; (3) they become not merely so many separate acts of adjustment, but prepotent habit trends, or drives, which in time appear as ends in themselves; (4) since they become controlling forces in themselves, they tend to carry the individual past an adjustment which is simply 'adequate' to higher levels than he would have attained without the original defect. The relation of the personality to its social sphere cannot be fully understood without recognizing these dynamic forces of human nature.

Extroversion — Introversion. We have discussed at some length the distinction between overt adjustment to reality and the internal assumption of defensory attitudes and imaginal solutions. Leaving out of account the question of compensation, there is justification for regarding the tendency to overt or to internal adjustments as a separate trait. The extremes of this trait are

extroversion and introversion. The extremely introverted person obtains his satisfactions by mental imagery. Overt reactions are blocked because they employ reflexes antagonistic to other emotionally toned drives. The impulse therefore forces its way into the autonomic nervous system, setting up a highly pitched and pervasive emotion. Such repression renders the individual very 'touchy' on any topic connected with the inhibited neural patterns. The breadth of emotion, or affective spread, is apt to be considerable. Word association experiments, in which the subject is asked to respond to spoken words with the first word that enters his mind, are convincing tests for introversion. If the stimulus word (spoken by the experimenter) arouses an associated word connected with the nexus or 'complex' of inhibited reactions, that word will often be inhibited and a more indifferent word substituted. There will be an accompanying emotional disturbance. Both of these effects will serve to delay far beyond the average the time required for giving the response word. All persons show this phenomenon occasionally; but it is far more pronounced in the case of the introvert.

The introverted person has recourse to a wealth of day-dreaming and night-dreaming for the fulfillment of his repressed tendencies. The consequence is a severing of the connections with reality. Real conditions are fancifully distorted in such a way as to satisfy the cravings of the individual, and a bizarre set of values and entities are constructed. There is also an intense 'personalization' of all events that come within notice. Remarks intended to be impersonal are often taken in a personal sense, with resulting suspicion and resentment. In insanity this symptom occurs in an exaggerated form and is known as 'ideas of reference.' The heightened self-feeling is shown in the word association experiment by the giving of many responses peculiar to the internal imagery and past experiences of the subject ('predicate responses'), or charged with an unusual emotional significance ('complex indicators').

Although introversion in its extreme form borders on certain types of insanity, a moderate degree is by no means a serious disadvantage. The high level of imagination and feeling with which

it is associated is necessary for the fullest participation in literature, religion, and art. Introverted self-tendencies are often a vehicle through which genius finds expression, as, for example, in the cases of Swift, Byron, Carlyle, De Quincey, Poe, and MacDowell.

Extroversion, being the more normal condition, does not present so clear a picture as introversion. The extrovert simply lacks the symptoms of repression, conflict, over-sensitiveness, unreality and protracted day-dreaming. He is easier to make contacts with because he does not set up defensory attitudes nor respond with some unintelligible inhibition or burst of emotion. His poise is not disturbed by exaggerated self-feeling. Life for him is probably less rich in emotional and imaginal experience than for the introvert; but he is likely to be better adjusted to the actual world and the people in it.[1]

Insight. Another trait having to do with the attitude toward reality is insight. In this case the reality concerned is the individual himself. Does the individual adopt a fair and objective viewpoint toward his own driving forces, his motives, and his limitations? Is he willing to place the blame for his failure upon himself; or does he 'project' it, and ascribe it to the injustice of others, the hard times, or the presidential administration? Does he view himself as others would see him if his complete nature were exposed to public view? If he does, he possesses the maximum degree of insight.

The greatest obstacle to clear insight is the tendency to act from one motive and to try to make ourselves (and others) believe that we are acting from another. The substituted, or rationalized, motive is one which 'sounds better' to the social environment as reflected in our own consciences. In this way we comfort ourselves for our past offenses, and delude ourselves as to the ethical bearing of those which we are planning to commit. How many car-riders persuade themselves when their fare is not collected that the transportation companies are always robbing the public anyway! Queer reversals of logic often result from rationalization. When a man votes for a public assessment that will benefit chiefly his own

[1] The term 'extroversion' is here used in a sense different from the meaning of extroversion (sometimes spelled extraversion) in psychoanalysis (cf. p. 368 and footnote).

street and property, he is apt to argue for a liberal hand in allowing the local government to disburse its income for the 'public good.' The same man will later justify slight shortages in his income tax return by the argument that the Government will only waste the people's money in red tape and foolish innovations. In cases also where moral principles are not involved, such as conflicts between antagonistic personal desires, rationalization helps us to remain oblivious of our true natures. A maiden smitten by love at first sight will leave no stone unturned to secure another meeting with her idol. But she will parry every self-accusation of unmaidenly conduct by elaborating 'innocent' reasons for her doing thus and so, reasons which she herself believes. The hypocrisy is as unconscious as it is complete.

An eloquent example of an attempt to delude one's self with contrary motives, which, however, failed because insight was too strong, is seen in the soul-torment of Claudius in Shakespeare's *Hamlet:*

> . . . But O, what form of prayer
> Can serve my turn? Forgive me my foul murder! —
> That cannot be; since I am still possess'd
> Of those effects for which I did the murder, —
> My crown, mine own ambition, and my queen.

And later:

> My words fly up, my thoughts remain below;
> Words without thoughts never to heaven go.

There are individuals who, like Claudius, are too firmly grounded in reality to be able to deceive themselves.

Insight in the form of ability to see through one's rationalizations and defense attitudes is one of the strongest of social assets. He who can judge his own traits for their true worth has no delusions of grandeur about himself. His *self-evaluation* is perfect. He has also the best start toward self-improvement, for he knows where his strength and his weakness lie. He can mingle with his fellow men upon a footing of candor and mutual understanding because they will not have to conceal their true opinions about him. And best of all, he can appreciate a joke upon himself. Humor personally

directed and caricature strike the man without insight like a purely hostile thrust. To the man *with* insight they are a refreshing jest, because he can see the point. To be able to laugh without malice at others one must first know how to laugh at himself.

Ascendance — Submission. If two persons of equal status come into a face-to-face relation, and if the behavior of each is a response solely to the immediate behavior of the other, there generally results a conflict, genuine, though often unconscious. The reaction of each is centered in the drives of his own personality. Even where there is agreement as to the ends desired from the interview, there will be some ground for friction as to the choice of means. Social behavior is not a smoothly running machine, but a succession of conflicts and readjustments between individuals. Each one therefore strives to carry his point in the encounter. In the sequel there stands revealed one of the fundamental traits of personality. One is likely to become the master: his impulse dominates. The other yields and adjusts his behavior to the control of the first. The former personality we may call ascendant — the latter, submissive.

So swift and certain is this sorting of personalities that frequently the issue is decided in the first instant of the conflict, or indeed before it begins, by the glance and bearing of the dominant individual. A story told at our army training camps gives the Scotsman's version in a situation where the stakes of the personality struggle were high. "Yuh leap upon the parapet with yer bay'net, an' pick oot yer Boche. Then yuh look 'im square in the e'e, an' wan of ye is a dead mon." Thus it is also throughout the less crucial issues of life. The outcome is more often decided by the adjustment of the two personalities in the pre-conflict period than by the blows of the conflict itself. It is true, of course, that we are ascendant toward some individuals and submissive toward others. But if we strike an average of the individual's behavior in contact with his *equals*, we may place him with some assurance at some point on the scale between the two extremes of complete ascendance and complete submission. It is through this trait more than any other that personality becomes a factor in social control.

Two of the leading conditions of ascendance are physical size and

energy. Male and female, in contacts of equals, stand in the ascendant-submissive relation. Organizations in which a reverse relation is attempted are involved in continual friction. The trait may be independent of intellectual superiority. A naturally submissive individual of high ability may use his intellectual gifts by way of a vicarious compensation for social defects. From his study or laboratory he may control the thought of the intellectual world; yet in actual face-to-face contacts he can scarcely give orders to his butler. The personal relation is a unique field for exhibiting the personality.

The origin of a submissive attitude reaches far back into childhood. Frailty, physical defect, or association with older children, if not relieved by compensation, are almost certain to lead to a non-resistive trend of behavior. The effect usually persists into adult life. Repression and cringing obedience to an austere parent, teacher, or elder brother may leave the personality with a permanent mark of submission. Reticent persons who are afraid to express themselves in a company or to superiors often have a history of this sort. Almost every one, in fact, has met certain older persons by whom he felt 'awed,' 'magnetized,' or 'subdued.' Some scarcely remembered resemblance between such a person and the father or other hero of childhood days evokes the old-time habits of awe and submission.

The ascendant personality, like the submissive, has its genetic phase. The eldest child, the strong and active child, the child thrown early upon his own resources, and the *enfant terrible* who controls his parents, all bid fair to retain their ascendance in adult relations. In an experimental contest of strength of grip individual differences in respect to this trait were evident. Two boys, each with a dynamometer in his hand, stood facing each other ready to begin the contest. And at that very moment the contest was often decided. The weaker, overwhelmed with the thought of the other's actual or supposed strength, became submissive at the start. His attitude shifted from a desire to beat his opponent to an effort merely to make a respectable showing. The attitude of the ascendant boy was unwaveringly to conquer his opponent, and to stand at the head of the list. The frank play of childhood soon reveals

the degrees of ascendance or submission present among playmates. Each is dominated by certain ones and in turn dominates others as unequivocally as rank asserts its privilege in an army.

The trait of ascendance is well illustrated in a story told of Roosevelt on one of his Western speaking tours. Just before his address he was greeting the leading citizens when a huge cowboy approached with extended hand, and, taking the President off guard, gave him a powerful grip that made him wince. After he had finished speaking, Roosevelt happened to catch sight of the young Westerner again. Offering his hand a second time to the surprised youth, he seized the initiative and gave him in return a squeeze that almost made him cry out with pain. Here we see the conflict of two powerfully ascendant personalities, each struggling to thrust the other into the submissive rôle.

Expansion — Reclusion. There is another trait through the possession of which an individual stands out among his fellows. This is the trait of expansion, its opposite being reclusion. The expansive person is one whose personal touch enters into all that he says or does. His private views, characteristics, and even defects are brought into light on all occasions. He is opinionated, though by no means always objectionably so. The reclusive individual, on the other hand, keeps his personality in the background. His light, as well as his defects, is hidden under a bushel. He fulfills his office in a perfunctory manner without putting a personal touch into his work. The expansive person answers a questionnaire, writes a letter, or files an application for a position in a manner charged with personal references and information, opinion and interests. We feel that we have made a genuine contact with the personality. The communications of the reclusive individual, however adequate objectively, are poor in self-expression. They leave us in the dark as to the sort of man or woman we are dealing with. We always wonder whether there is 'more behind' what is written or said, or whether that is really all there is of the person.

References to self, the use of 'I think,' 'my experience has been,' etc., in a discussion of objective topics, may be used as a fair index of expansion. According to counts made of ego references in seminary reports given by expansive and reclusive graduate stu-

dents, some individuals make as many as eighty or ninety references to self per one half-hour of speaking; others make as few as four or five. The higher numbers are extreme, for the median person (neither markedly expansive nor reclusive) makes about ten. It is to be understood that expansion does not necessarily imply aggressiveness or conceit. It often arises from a high level of energy and ability with full consciousness of one's powers. The only social requirements are, first, that the individual shall have a personality worthy of expanding, and, secondly, that he shall stand sufficiently high in tact and other social traits to avoid giving offense in the process. With these qualities he may become a leader; without them he will probably be an insufferable bore. Reclusion, on the other hand, does not mean modesty or humility. Unpopular people are more likely to be reclusive than expansive. Expansion may be present with or without ascendance. It sometimes appears as a kind of compensation for the absence of the latter as a means of influencing one's fellow men.

Sociality. Ascendance, expansion, drive, compensation, and other self-expressive traits have brought us into close touch with the social life of the personality. The emphasis, however, in these traits was placed upon the influence of the individual upon his fellows. The reverse side of social contact remains to be described; namely, the susceptibility of the individual to the influences of society. This is the sphere of sociality. It is marked at one extreme by aggressive egoism, incapable of modification by social pressure; and at the other by high reactivity to stimulation from others and complete socialization of behavior in response to such stimuli.[1]

The first trait to consider is a certain sensitivity, perhaps an original capacity, which we may call *susceptibility to social stimulation*. There is a familiar difference between the callous person and the one who is quick to respond to social approval and disapproval.

[1] It should be remembered that the careful distinctions drawn between the various traits under sociality, as well as in the field of personality generally, are made chiefly for convenience in analysis. In the actual observation of individuals such clear-cut distinctions are impossible; for behind almost every act there lies an inextricable fusion of motivating and determining factors.

This susceptibility characterizes the man of tact, the diplomatist, and the 'good mixer.' Such a one is quick to 'grasp the situation' in a group into which he is thrown, responding intelligently to facial expressions, postures, and tones of voice. The opposite type finds himself at an utter loss. The subtle play of social stimulation is a language he can never learn.

In order to be adapted to civilized society a man must not only be sensitive to the social objects about him; he must also develop permanent habits of response which are in accord with the necessities of group life. Such development may be called the *socialization* of the individual. It consists of a modification of the original and purely egoistic prepotent reflexes through instruction received in the social environment. The process has been discussed in detail in Chapter III. The socialized man is one who obeys the law as a matter of principle rather than through compulsion. Sharing his part of the responsibilities of social life and citizenship has through habit become second nature to him. In submitting himself to military discipline in war and taxation in peace, and in following regulations for the public good, such as 'keep off the grass' signs, rules concerning library books, and the like, he feels that he is developing rather than limiting his individuality and freedom. Like Socrates he believes in upholding the law even though he may consider the particular statute he obeys to be unwise.

Conduct the opposite from that of the socialized man springs from the original and unmodified *self-seeking* of human nature. Self-seeking may take the form of passive selfishness, in which the individual merely goes on his way deaf to any appeal for personal sacrifice or coöperative enterprise. The training required to associate satisfaction with effort expended for social rather than for personal ends has been lacking in the history of this personality. The counter-trait to primitive self-interest is the quality of simple unselfishness. Many, no doubt, believe that that spontaneous and naïve unselfishness one occasionally meets is an inborn trait. Positive proof on this point is lacking. Certainly in many cases basic unselfishness has been inculcated early in childhood.

Self-seeking may also assume an active or *aggressive* character.

Ascendance combined with the primitive unsocialized drives overrides the feelings and even the rights of others. Aggressive self-seeking is the central trait of the criminal personality. It is usually associated with an absence of sensitiveness to the influences of the social environment. The recidivist offender is almost infantile in the unmodified egoism of his drives. Conditioning by means of social stimuli, and for social ends, has never been brought about. Social workers agree as to the basic selfishness of the delinquent class. Defect of training in this respect, together with intellectual inadequacy and emotional unbalance, is the very root of the problem of crime.

In the trait of *social participation* we make a further advance in the sphere of sociality. Socialization implies a somewhat abstract attitude toward law and custom. Does the individual go further in seeking actual contact with his fellows? Are they necessary for the fullest expression of his emotional and active life, or are they merely so many environmental objects to which he must adjust himself? The recluse and the introvert generally stand low in the scale of social participation. This trait signifies in its possessor a drive for social activity, for reacting to his associates and causing them to react to him. Individuals who thrive in an atmosphere of church sociables, card parties, and dances exhibit a certain degree of the trait. Personal excitements, sex interests, and the like are probably, however, as significant causes for such behavior as the social drive in itself. Sociability would be a fitting name for this level of participation. A higher score in this trait would apply to those who bring charity into actual contact with the needy than to those who subscribe to it by participating in charity balls. The settlement worker, the Sunday-school teacher, and the boys' club leader are *true* social participants in that their drives are centered in social influence and in the promotion of human welfare.

In surveying personality with reference to socialization, self-seeking, and social participation, we are really canvassing the field of *character*. This field comprises the personality as seen from the viewpoint of social justice, and as measured in the dimension of legal and moral standards. Honesty, fairness, reliability, and candor are socialized drives relating to specific situations. The

social virtues are generally developed in combination, for they form a single integration of allied drives based upon social approval, and represented in consciousness as a personal ideal of the highest type of manhood and womanhood.

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CHAPTER VI

THE MEASUREMENT OF PERSONALITY

Introductory Statement. With the recent advance in knowledge of the dynamic principles of human nature there has developed a need for evaluating the traits of individuals in some definite form. From the point of view of both technique and application the methods of personality measurement are important for the social psychologist. Although their stage of development is still crude and tentative, it is worth while briefly to outline these methods. They may be divided into two general classes: (1) those dependent upon the estimates given by associates of the individual studied, and (2) special methods of objective testing. The first class is subdivided into (a) systematic questionnaire methods, and (b) rating methods.

1. Methods of Judgment by Associates. *A. Systematic Questionnaire Methods.* This type of method is merely an attempt to canvass the personality by questions concerning the characteristic reactions in various fields. Such questions should avoid generalities and seek detailed facts from which to draw conclusions. The following are examples: Is the individual talkative or taciturn? How punctual and how thorough is he? How many times have you seen him angry? For what causes? Upon what subjects is he 'touchy?' Is his sex and family life normal and happy? Does he display aversion, affected indifference, or repressed emotion in regard to sex topics? Does he seek or shun society? How readily is he browbeaten by tradespeople and officials? How frequently does he dominate them? What defects has he that he is willing to acknowledge? Does he blame others as a rule for his own failures? Are his sports, recreations, and æsthetic or religious interests a proper balance for his vocational pursuits? Does he adapt himself readily to the moral standards of society? Various fields of adjustment — economic, social, sex and family, recreational, and moral — are covered, and inferences concerning specific traits drawn from the answers.

Complete and useful questionnaires and trait lists have been developed for clinical and other purposes and rendered quantitative by the use of pluses, minuses, and marks denoting extreme degrees of the behavior in question (Wells, Spaulding),[1] so that the assets, liabilities, and compensations of the individual in the various spheres may be evaluated. The questions being suitably worded, a simple count of the 'Yes' and 'No' replies may be rendered diagnostic in value. (Woodworth.) Fields of inquiry, with quantitative evaluation, have been adopted for studying the personalities of mental defectives. (W. E. Fernald, Porteus.)

The questionnaire method may be made available for self-study, provided (1) the questions relate to actual overt acts, not feelings, motives, or intentions, and (2) the individual can adopt an objective attitude toward himself and one free from rationalization. The basis of the replies must be what one *does*, not what traits one believes himself to have.

B. Rating Methods. Although questionnaire methods are useful for general impressions, for quantitative and comparative treatment it is preferable to *rate* the individual in regard to certain selected traits. For accurate estimates it is essential to have a number of judges or raters because of the complex variables entering into the judgment of one person by another. An average of the ratings of from five to ten competent judges is to be desired, though three separate ratings are far more satisfactory than one. There are two varieties of rating method, which we may term 'scoring' and 'ranking.' The *scoring* method is used where a single individual is to be rated, or where, if ratings of a group are desired, each rater knows only a part of the individuals. A subjective scale is imagined, such as from 1 to 5, or a percentile basis, upon which to express the degree of each trait which the rater estimates the subject to possess. Since the only standard available is that afforded by a representative group of the subject's associates, the extremes and median of such a group are generally imagined in giving the score. The army rating method for commissioned personnel attempted to render the scale more stable and definite by asking the

[1] Full references for published work referred to by the names of the authors will be found in the list of references at the end of this chapter.

raters to call to mind actual officers who in their opinion stood at certain points along it, and then proceed to fit the subject to the 'personified' scale. The *ranking* method, available only in rating an actual group all of whom are known to each rater, is more accurate. Here the subjects to be rated are arranged by each judge in their order of rank in respect to each trait, the one possessing the highest degree of the trait standing first, and the one with the lowest degree at the bottom. The rating of each subject is then expressed as his rank in the group. The standard here is truly objective (being the group itself) and identical for all judges. Comparisons are more concrete and definite than in the scoring method.

The question of the reliability of the judgments of associates in respect to different traits, and in general, has been investigated in a number of experiments. The usual assumption is that the closer the agreement (that is, the less the variation) of the judges upon a given trait, the greater is the probability that the average of their ratings is an accurate measure of that trait. Variation is the necessary result of personal bias away from the truth; hence uniformity must mean that the truth is attained.[1] A simple measure of the degree of variability is found in the *average deviation* (A.D.)[2] This is found by (1) taking the average of all the ratings given an individual in a certain trait by the group of raters; (2) finding the deviation of each rater from this average (that is, the difference between his rating and the average, regardless of sign); and (3) taking the average of these deviations of the several raters. This latter average is called the A.D. If it is large, the variability is great (that is, there is little uniformity of opinion); if it is small, the variability is slight. Averaging the A.D.'s of a certain trait for all subjects gives a final index of the reliability of judgment in that trait.[3]

[1] It is conceivable, however, that the entire group of raters might err, and err uniformly: that is, variability may be due to a *common* bias. This is likely to be the case where a boy is rated by a homogeneous group of judges, such as teachers, preachers, etc., who all see him under a single and somewhat unnatural set of conditions. It would be true also with heterogeneous raters where the trait considered is misleading, as in the case of the shy person whose reclusion is interpreted as snobbishness. Barring these exceptions, however, the rule is fairly sound. If the individual should differ strenuously in his own opinion from the average rating he gets from others, the raters are more likely to be correct than he is.

[2] Sometimes called *mean variation* (abbreviated *m.v.*).

[3] For a more detailed explanation see Hollingworth: *Vocational Psychology*, p. 42

In a certain group of 25 subjects the A.D. of the various traits was found to range between 3 and 6 ranks (ranking method used) out of a possible 25. (Hollingworth.) This is a sufficiently small variability to allow us to attach at least a rough value to the average rating by associates. In regard to particular traits, the lowest A.D. (highest reliability) was found for vulgarity, intelligence, beauty, and conceit; the highest A.D. (least reliability) for snobbishness and refinement. (Hollingworth.) The rule is that qualities for which there is objective evidence — for example, intelligence and vulgarity — are most reliably rated by the judges; while inner attitudes and feelings — for example, snobbishness — are less accurately evaluated. Similarly the socially manifest traits of quickness, originality, efficiency, ascendance-submission, expansion-reclusion, and social adaptability are reliably judged (low A.D.). The more subjective aspects, such as introversion, emotionality, disposition, and characterial traits, are judged with much less dependability (high A.D.). (Norsworthy, Cattell, G. W. Allport.)

Another question of practical bearing concerns the reliability of one's rating of one's self in comparison with one's rating by others. As a rule the deviation of the self-rating from the average of ratings by a group of judges is greater than the average deviation among the judges themselves. In other words self-rating is not so accurate as rating by others. (G. W. Allport, Hollingworth.) Low insight and rationalization distort self-estimates. Thus Professor Hollingworth found that subjects rate themselves too high in socially desirable traits, such as sociability, refinement, and humor, and too low in undesirable traits, as vulgarity, conceit, and snobbishness.

Insight and self-evaluation are readily measurable by finding the difference between the self-ranking and the ranking given by others in the various traits, and prefixing a + or − sign to denote over- or under-self-evaluation. Repeated experiments in which rank in scores of an intelligence test were compared with self-rankings in intelligence previously taken yield the following interesting results. The most intelligent underrate their ability, while the least intelligent overrate their ability. The greater the superiority in intelli-

gence the greater is the degree of under-self-estimation; the greater the inferiority the higher the overestimation. The more intelligent half as a whole have better insight than the less intelligent, for they underrate themselves less than the inferior ones overrate themselves. (F. H. and G. W. Allport.) The tendency toward under-self-evaluation by superior individuals and over-self-evaluation by the inferior may be due in part to the influence of uncertainty, in causing the self-rater to incline toward an average mark. But it is equally probable that factors of insight, rationalization by the inferior of their failures, and the like play a true part. Hollingworth found similar tendencies in that those subjects who stood high in neatness, intelligence, humor, and refinement were better judges of these traits in themselves and others than were those lacking in these qualities. Individuals showing vulgarity, snobbishness, and conceit were poorer judges of these traits in self and others. This result can be interpreted to show the close relation of insight and drive in the improvement of personality. Recognition of a certain trait as a personal ideal leads to its acquisition. One acquires the characteristic because he is a good judge of it and of himself. On the other hand, in the lack of recognition of an undesirable trait in one's self no drive is developed to eradicate it.

The rating methods are capable of considerable refinement and utility if scientifically developed. The main requirements for accurate rating are the following: (1) the selection of traits that are genuine, fundamental, and distinct; (2) a sufficient number of raters, preferably individuals who see the subject from various viewpoints; (3) a thorough knowledge and mutual agreement among the raters as to the exact meaning of the various traits; (4) a sufficiently extended acquaintance with the subjects, an acquaintance during which the rater has the scale of traits in mind; (5) basing of the ratings upon actual facts of behavior, not general impressions; (6) practice in the use of the scale; (7) avoidance of the tendency to allow a good or bad opinion of the subject in one trait to bias one's judgment in regard to another trait.

2. Testing Methods. Rating, though fundamental, is a time-consuming and somewhat cumbersome method of personality

study. In the fields of education, mental hygiene, vocational direction, personnel management, and social work there is urgent need for simple and practicable tests of special traits. In the sphere of intelligence and special capacities much progress has been achieved. This work lies outside the scope of the present discussion. Within the other fields of personality measurement is a far more complex and subtle problem. Two phases of technique are necessary for developing such measures. First, each special test must be standardized; that is, one must know from experience with it what scores in the trait in question to assign to various types of performance in the test. Secondly, results obtained by its use should be verified by comparison with some other criterion (as objective a criterion as possible) of personality. One method of verification is to plot graphs representing the individual's personality on ordinates standing for the values achieved in tests of the several traits. Persons who know a group tested then examine such 'profiles' and try to identify the individuals to whom they belong. The most satisfactory method, however, is the comparison of the rank order of the subjects as determined by the scores they obtained in the test of a trait (highest first, etc.) with the average rank order obtained from a number of ratings of the subjects upon that trait. If the two rank orders are identical — that is, if the same person occupies the first place in each, another person the second place in each, etc., or if the lists are closely similar — it is justifiable to infer that the test used is a fair measure of the trait as socially established by rating. This is known as *the method of correlation*. If the two rankings are identical there is said to be *perfect positive correlation*, and the 'coefficient of correlation' (r) is + 1.00. If there is no similarity at all in the rankings, the coefficient of correlation is said to be zero. Positive coefficients range between 0 and + 1.00 and are determinable by formulæ.[1] Below .40 not much significance is attached to r. Coefficients ranging between .40 and .60 are suggestive of correlation, with other factors entering to disturb the perfect agreement of the ranks. A coefficient above .60 is fairly convincing, although for exact purposes one

[1] For a simple exposition of the correlation method, and the use of a convenient formula, consult Hollingworth: *Vocational Psychology*, pp. 44–46 (and footnote).

of .75 or .80 is needed. In case one rank order is reversed, instead of identical, in relation to the other rank order — that is, if the first in one list is last in the other, and so on — there is said to be *perfect negative* (*or inverse*) *correlation* ($r = -1.00$). Negative coefficients, ranging from 0 to — 1.00, indicate with increasing certainty that an individual low in one of the two correlated measurements may be predicted to be correspondingly high in the other.

An important testing scale of traits centering chiefly in *motility* ('will') has been devised by Professor June Downey. The handwriting reaction is used as a basis of exhibiting traits. Speed is measured by the rapidity of the writing movement; freedom from inertia (hyperkinesis) by the difference between the customary and the maximum speed of writing; flexibility and care for detail by success at disguise of writing and imitation of a model; assurance and resistance to opposition (ascendance) by resisting verbal suggestion and by assertiveness shown in writing with eyes closed when an obstruction is suddenly held in the way of the pen. Coördination is tested by the ability to write a long phrase rapidly in a very restricted space; and inhibition, in the sense of control and tenacity, by the extent to which writing may be retarded while still keeping the pen moving, a task disagreeable to explosive individuals. One of the most significant tests is that of impulsion. If the individual of high impulsion writes his name with eyes closed or while counting, the writing is likely to be hastened and increased in size. With an inhibited individual handwriting under these conditions is diminished in size and retarded. The fundamental movement trends thus reveal themselves when the normal conscious control of the cortex is blocked through distraction.[1]

Graphs or profiles plotted on the basis of these tests indicate three general patterns of 'will' traits: (1) the willful and aggressive type, (2) the slow, accurate, and tenacious type, and (3) the explosive or 'hair-trigger' type. The significance of the traits measured for life adjustments is shown in graphs of successful persons who compensate for mediocre ability by a high register in will

[1] Impulsion and inhibition are almost the only traits which can be reliably deduced from samples of normal handwriting.

traits. High scores in these tests are achieved by leaders and eminent men, hence the social significance of the test scale. The limitation of the Downey scale is that it leaves the important sphere of self-expression almost, and the sphere of temperament entirely, untouched. The question also arises whether from simple writing movements one can draw conclusions which shall apply to personality traits in daily life. The author of the tests has done some verification by profile identification, but further proof is needed.

A simple but suggestive test of capacity for achievement is conducted by using Dr. G. G. Fernald's instrument for measuring the subject's persistence in remaining with his heels raised off the floor as long as he is able (that is, as long as he can 'will' to do so). A low score is due rather to unwillingness to stand discomfort and monotony than to actual fatigue. A group of normal high-school students averaged three times as long a period of this ordeal as a group of prisoners at a reformatory.

One of the few attempts to investigate the traits of *temperament* has been made by Dr. S. L. Pressey. The subject is asked to cross out of separate lists words which denote things unpleasant to him, or about which he has worried, or which he considers immoral. By the number and quality of words crossed one seeks to determine the 'emotional spread' (breadth) and other aspects. Data collected under the present writer's direction indicate that a test of this sort is equivocal because the introverted type reacts to it, not by crossing out, but by ignoring the words which are crucial in their emotional lives. This is a defense reaction against the invasion of complexes. The same phenomenon invalidates any attempt to gauge emotions through reactions to stimuli which condition them, and renders the problem of emotional testing extremely difficult. Emotional attitude and general outlook on life have been tested by giving the subject partial sentences, for each of which cards bearing several possible completions are offered. Some of the completions are humorous in tone, some are serious, conventional, cynical, etc. The emotional attitude is shown by the constant choice of a certain type of completion. An example of one of the sentences is: "A man who lives a pure life" — [completions] (a) "will miss a lot of fun"

(cynical, humorous), (b) "will gain the respect of all" (conventional), (c) "will be cheated by rogues" (pessimistic), etc. (Myerson.)

The most symptomatic tests employed for *introversion* are in connection with the free word association method described on page 116. Jung and others have distinguished two broad types of response words. First, there are those of an objective, non-emotional sort (for example, the response 'barn' given to the stimulus word 'house,' 'night' given as a response to 'day,' and the like), which are characteristic of the extroverted personality. Secondly, there are those of an ego-centric type common to introverts. Two sub-classes of the latter are the complex type and the predicate type, both described on page 116. Examples of associations revealing emotional complexes are 'father' — 'anxious'; 'hair' — 'falling out'; 'love' — 'Donald.' The predicate type may be illustrated by such personal associations as 'water' — 'glorious'; 'ride' — 'dangerous.' Responses of the ego-centric type, together with increase in reaction time, hesitation, repetition of the stimulus word or of reaction words (perseveration), giving of superficial words, rhymes, etc. (especially with increase of reaction time), confusion, correction of reaction word, stilted and nonsensical reaction words, are all indicators of the repressions of the introvert. A list of one hundred words was given to one thousand normal persons and a count made of the frequency of occurrence of the various response words given. By reference to this frequency table it is possible to use this list on any subject and to ascertain the degree of 'community' of his responses (that is, how much the words he associates tend to be like or differ from those associated by the majority of people). (Kent and Rosanoff.) Individuals giving many predicate reactions (introverts) have a low index of community in the words they associate. (Wells.) Low community index has also been found to have a high correlation with the degree of introversion as determined by rating. (G. W. Allport.)

The important trait of *ascendance* is difficult to measure, because to evoke it necessitates an actual personal contact. The writer, in collaboration with Dr. G. W. Allport, has attempted to develop an "Active-Passive Reaction Study" upon the principle of imagined

or represented situations involving face-to-face social contacts.[1] These situations, drawn as closely as possible from life, are presented in print, and the subject is asked to state the nature of his reaction as it *would be* if the situation were actual. A sample of one of the situations is as follows:

> You desire to board a boat or train to see a friend off. You feel it is important to do this; and the guard forbids you on obviously unnecessary technicalities. Do you obey silently, argue, or bluff your way past?

The first correlation of ranks based upon scores in this test with ratings on the trait of ascendance-submission gave a coefficient of .40. After improvement and standardization, as high a correlation as .80 was obtained. In spite of the obvious demands made upon the insight and coöperation of the subjects, a test of this nature seems to have practical possibilities. Professor H. T. Moore has obtained significant correlations between ratings on aggressiveness and the ability to gaze unwaveringly into the experimenter's eyes while performing a mental calculation. *Expansion*, another trait requiring a social *milieu*, may be roughly estimated by the character of the ego-references, self-descriptions, and personal opinions included in a letter of application for a position written by the subject.

The measurement of *character* and other *sociality* traits has been approached from the standpoint of ethical and social knowledge. Dilemmas involving moral principles to which the subject must think out the answer form one type of test procedure. The subject, for example, might be asked whether a man is justified in keeping five dollars which he sees another man drop, provided the latter owes him the money and has refused in an insulting manner to pay it. (G. G. Fernald.) Other tests involve the definition of moral terms, the evaluation of punishments which ought to accompany certain offenses, and the proper selection of reasons against types of unethical conduct. 'Ethical discrimination' is the name given to the trait presupposed by these tasks. (Kohs.) It is open to question, however, whether success in such tests does not show intelligence rather than character. One would be greatly aided, of

[1] Not yet published.

course, in solving the test if he had been brought up under moral instruction or had thought about the social obligations implied in the problems. To this extent we should expect one who receives a high score to be well grounded in moral habits; and to this extent, therefore, the test would be successful. One's general attitude toward morality might also be reflected in the result. Dr. Myerson's work, discussed under tests of emotional attitude, extends the completion method (described on page 133) to the detection of ethical tendencies.

An interesting test devised by Dr. G. G. Fernald requires the arrangement of a shuffled series of crimes, of widely varied gravity, in the order of magnitude from the least to the most serious offense. In the performance of this test greater deviations from the norm established by a group of legal and scientific men were found among reformatory inmates than among law-abiding groups. In giving this test to normal persons the writer has found a considerable number of thoroughly ethical individuals who had wide deviations from the norm. These are to be explained, not as defects of 'moral vision,' but as the result of a highly personal attitude toward the offenses, an attitude based on feeling rather than objective social and judicial policy. Probably most criminals have this sort of personal reaction to legal and moral problems; hence their tendency to deviation in the test. But the converse, that all who have such attitudes are criminalistic, is far from true. True characterial defect requires the addition of other factors as described in Chapter V.

Adequate tests of character must involve actual drives. The artificiality of any present testing situation seems to be a discouraging hindrance in coping with the problem. Character is truly revealed only in the vital issues of real life. It will probably be some time before we shall have advanced beyond the methods of the business man who, desiring to employ an office boy, allowed each applicant to walk into a room where lay an unguarded pocketbook, while the prospective employer watched behind the crack of the door.

To determine the trait of *social participation* further use has been made of the 'social knowledge' method. The subject is required to

answer questions and to define terms drawn from the technical jargon of sports and amusements, and from the vocabulary of church hymns, parliamentary procedure, and etiquette. (Ream.) The assumption here is that if a man has true social tendencies, he will have mingled with all sorts of groups and will have acquired the lingo of each. For measuring *susceptibility to social stimulation* the writer has used a test of interpreting facial expressions from photographs, which will be referred to in a later chapter.

This completes, in the main, the roll of commendable but wholly tentative approaches to the measurement of personality. The problem of bringing human emotions, drives, and social attitudes to adequate expression in an artificial test situation is a perplexing but perhaps not an impossible one. Workers in this field should remember that it is in theory as well as in application that progress is needed. The deeper our understanding of the fundamental driving forces of personality, the more certain will be our success in isolating and measuring their manifestations.

Types of Personality. Thus far we have dealt with traits independently of one another. The important question remains as to how far these qualities are associated in definite degrees, forming patterns or types into which a large proportion of humanity can be placed. Although every human face is distinct, we can recognize types of faces. And so with personality, in the midst of infinite variety in minor details a few common patterns may be found. The problem is one largely of correlation. If a group of people can be found in which high or low ranks in certain traits are associated, either positively or inversely, with high or low ranks in other traits, so that a fairly constant pattern or profile of traits results, these individuals may be said to constitute a type.

A central problem in intercorrelation is the relation between intelligence and sociality. The correlation is seemingly positive, although the existence of highly intelligent criminals affords a striking exception. Dr. Webb, in collecting ratings of school and college students, found a correlative tendency, which he calls a 'general factor,' underlying character. Its presence is shown by a variety of virtues, and its absence by a variety of defects. Desirable traits correlate highly with one another; while undesirable

traits also intercorrelate highly, and correlate inversely with desirable ones. There is, moreover, a positive correlation between the admirable qualities and intelligence. It is probable that Dr. Webb's concept of a general factor is to be explained in terms of the highly integrated organization of allied drives described in our discussion of character. The general factor is really a genetic one, and consists of the formation of many prepotent habit trends all developed in one direction by social approval and disapproval. The factor of intelligence merely increases the rapidity of fixation of these socially useful habits. Intelligence, being a capacity, is innate; whereas excellence of character, consisting essentially of habits, is acquired.

Professor Terman has refuted the notion that the intellectually precocious child is one-sided. Ratings by teachers and elders in comparison with intelligence test scores show that the mentally superior child is usually superior also in personal and moral traits. Superior children generally come from superior homes — homes in which their high native learning capacity can be used to assimilate social and moral virtues from their environment. The high correlation of intelligence and character is to be expected under conditions like these.

Significant conclusions regarding types have been derived from the correlation of ratings in the field of self-expression. Ascendance, expansion, extroversion, and high self-evaluation (expressing self-confidence) are all positively correlated. Their opposites, of course, also correlate with one another. The correlation between ascendance and extroversion in one group used was found to be .70; while that between ascendance and expansion was .86.[1] There are, of course, exceptions such as occasional introverts who develop expansion as a kind of compensation. There are also some extroverted reclusive persons. On the whole, however, we may recognize two prominent types, one high in self-expression and the other low in that sphere. (G. W. Allport, F. H. Allport.)[2] Professor

[1] Lack of distinction in the raters' minds between the various self-expressive traits may account for a part of this high correlation. Since striking exceptions to the correlation, however, were readily noted where the traits did *not* go together, the confusion of traits was probably not a serious source of error.

[2] Main results not yet published.

Downey has found similar correlations, impulsion (of a somewhat expansive type) correlating with feeling of self-worth to the extent of .81, and with aggressiveness (ascendance) with a coefficient of .82. The existence, therefore, of two types of self-expression seems fairly well established. Because of the dominant and subordinate rôles they play in social contacts we may call them respectively the *strong* and the *weak* types.

It seems probable that the most important general factors underlying these two types are respectively the excellence and the defect of physique. Ascendance, impulsive energy, self-confidence, expansion, and an extroverted view of life, all seemed in the individuals studied to go with good physical development, and their opposites with illness and defect. Other factors, of course, and particularly compensatory ones, may operate to limit the application of this theory. Positive correlations are also indicated between strength of self-assertive traits and sociality factors. The strong personality, more regularly than the weak, is characterized by social adaptability, participation in social affairs, and sensitivity to social influences.[1]

General Summary — The Individual as a Unit in Social Behavior

Starting from the premise that social psychology is concerned with the behavior and consciousness of the individual in relation to his fellow beings, our first task has been to study those aspects of the individual which are destined to direct and control his behavior within the social sphere. In order to understand these aspects it has been necessary to delve into the very fiber of the organism, and to disclose the forces and the methods by which men feel, think, and act. To begin with the organism itself, man is essentially an enormously complex system of reflex arcs, whose central portions are so plastic, so modifiable, and so richly interconnected that all manner of coördinations are possible between stimulations and

[1] Space unfortunately does not permit the exhibition of some of these types in the form of trait profiles. Good examples of such graphs may be found in the references to Professor Downey's work and in the article on personality traits in the *Journal of Abnormal Psychology and Social Psychology* for April, 1921.

acts; and the most subtle integrations of habit and thought may be acquired and retained for future adaptation.

A few inherited reflexes of prepotent character form a crude but vital basis for acquiring acts of defense, nutrition, and sex, in response to importunate stimuli from within or without the body. Conditioned response and motor learning develop these reflex movements into great systems of adaptive habits both universal among mankind and peculiar to individuals. The social environment, chiefly through language, exerts a vast influence upon this process of modification. It directs the channels into which the prepotent demands shall flow, determines and gives instruction in the means for their satisfaction, and inculcates in the individual the drive toward adaptation and approval within the social sphere. Socialization is thus achieved by learning within the social environment.

Internal, or visceral, responses to stimuli combine with the overt behavior to produce an emotional reinforcement in the struggle for adjustment. Here again the forces of society enter into the problems of individual life. The evoking and conditioning of love, sympathy, and aversion, as well as of the complex human sentiments, proceed according to the social influences brought to bear. Avoidance of repression through society, and the use of the reinforcing effects of emotion for social ends, are problems encountered in this field.

Finally, the laws of social contact cannot be understood without an appreciation of the capacities, driving forces, and habit trends which constitute personality. Intelligence, movements, emotions, personal ascendancy, drive, compensation, grasp of reality, self-understanding, social capacities, and character are all subject to variation and combination among individuals in ways that profoundly affect their adjustments to one another. It is important to know how these traits may be recognized in social relations, how society has operated in their formation, and what expedients of a social nature may be employed in evoking and measuring them.

Personality is preëminently the social aspect of the individual. With its study we complete the potentialities of the human being

for social life, and pass on ot consider those interactions with other human beings which constitute his social behavior.

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PART II
SOCIAL BEHAVIOR

PART II

SOCIAL BEHAVIOR

CHAPTER VII

THE NATURE AND DEVELOPMENT OF SOCIAL BEHAVIOR

Definition and Classification. In the first part of this book an account was given of the structures, reflexes, emotions, habits, and traits which are fundamental in the behavior of each individual as a unit of society. We have seen that in the formation and direction of these behavior mechanisms the social environment has been one of the most essential conditions. We are now to turn from the genetic consideration of human nature to the process of interaction between individuals. Instead of the establishing of individual traits through the effects of stimulus and response, we shall study the stimuli and responses themselves in so far as they arise within the sphere of social contact. We may begin most appropriately with the social behavior observed among animals, for it is from the origin and development of social life among the lower orders that a fuller understanding of the human aspect may be gained. A logical procedure would then be to complete the developmental study with the social behavior of infants and children. For convenience, however, and for better understanding of the adult phase, we shall divide this latter genetic material among subsequent chapters on language, facial expression, and social adjustments within the family. Before proceeding with the evolutional development, it will be profitable to define social behavior and to make some attempt at the classification of its various forms.

Behavior, as defined in the second chapter, is the process of responding to a stimulus by an activity that is normally useful to life. Stimuli may be divided into two classes, *social* and *non-social*. A social stimulus is any movement, expression, gesture, or sound — in short, any reaction, made by an animal (human or infra-human)

— which produces a response in another. We should perhaps extend this definition to allow for the fact that the mere presence of an individual under certain circumstances may serve as a social stimulus. As a rule the individual whose behavior affords the stimulus and the individual who responds belong to the same species. There are many exceptions, however, such as the cat which reacts to the movements of a mouse by crouching and stalking, or the man who understands and responds to the barking of his dog or the nervousness of his horse. Stimuli which are not produced by the presence or the actions of individuals are termed 'non-social.'

Social stimuli involve behavior in two ways. (1) They are in themselves usually responses to stimuli either social or non-social in character. (2) They produce responses in others. For example, a barefooted child steps on a nail and sets up a cry of pain which evokes tender emotion and acts of ministration in a parent. The cry of pain (the social stimulus), which produces a response in another person (the parent), is itself a response to a preceding non-social stimulus (the nail). *Social behavior may, therefore, be defined as behavior in which the responses either serve as social stimuli or are evoked by social stimuli.* We shall discuss separately the nature of social stimuli and the responses to them in the chapters which follow.

The particular character of social behavior is determined by a number of circumstances. Among these are (1) the grouping or placing of the individuals, and the number and direction of the social stimuli; (2) the relative significance of social and non-social objects in the general field of stimulation; and (3) the degree of intelligence and ability to communicate possessed by the individuals of the group. Upon the last-named condition depends the value of social behavior as a means of biological adjustment. These three aspects, to be discussed in order, will serve as a convenient classification.

Linear and Circular Social Behavior. When individuals respond to one another in a direct, face-to-face manner, a social stimulus, given, for example, by the behavior of individual A, is likely to evoke from individual B a response which serves in turn as a stimulus to A causing him to react further. The direction of the stimuli

and of their effects is thus *circular*, the responses of each person being reëvoked or increased by the reactions which his own responses called forth from others. Ordinary conversation illustrates this form of contact, each party thereto being stimulated to utterance by the response which his former remark has aroused in his interlocutor. The genial optimist who finds human nature so desirable is responding principally to the pleasant expressions which his smile elicits from the faces about him. There is circularity also in hostile behavior. The provoking of either a dog fight or a human quarrel generally involves a mutual responsibility among its participants. Growls and threats are bandied back and forth, each one both a response to being growled at and a stimulus for a louder snarl from the other. This succession of reactions Professor Mead [1] has aptly termed a "conversation of attitudes." [2]

In situations which call for a mere transmission of stimuli, and where the effects are in one direction rather than back and forth, we find a simpler type of social behavior which we may describe as *linear*. The stalking of game illustrates a short linear series, the actions of the prey producing responses in the hunter. It is the aim, however, of the latter to prevent *his* responses from acting in turn as stimuli upon the quarry. Stealth and concealment prevent the circular reaction and diminish the likelihood of escape. The transmission of orders in an army is an instance of purely linear behavior. Here the conditions of organization require that the social stimuli (that is, the language of the orders) pass always in the direction of General to Corporal, and never in the reverse direction. The handing down of social tradition from generation to genera-

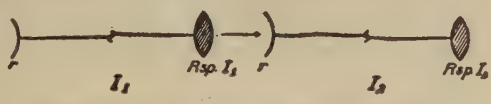

FIGURE 11. DIAGRAM OF LINEAR SOCIAL BEHAVIOR

I1 and *I2* are reflex arcs representing the stimulus-response mechanisms of two individuals. The response made to some initial stimulus by I_1 (*Rsp. I1*) serves as a stimulus to the receptors (r) of I_2, causing the latter individual to react (*Rsp. I2*). The arrow indicates the direction in which the social stimulus is operative.

[1] *Journal of Philosophy, Psychology, and Scientific Methods*, 1912, IX, 402.

[2] The reader should distinguish clearly between circular social behavior and the circular reflex (p. 39). The former requires two or more individuals; the latter is completed in the nervous system of a single individual.

tion may be regarded in a broad sense as a form of linear social behavior.

These two types, the linear and circular, are illustrated in Figures 11 and 12 respectively. The neuro-muscular apparatus of two individuals, I_1 and I_2, are represented simply by a receptor, afferent and efferent neurons, and an effector (the association neurons being omitted). The receptor of each individual is denoted by *r*. The muscle labeled *Rsp.* I_1 stands for the total overt response of Individual 1; *Rsp.* I_2 denotes the total overt response of Individual 2. In Figure 11 the response of the first individual serves as a stimulus to the second, as indicated by the arrow. In Figure 12 the response of each serves as a stimulus to the other. In Figure 11 the number of individuals in the series might be extended indefinitely.

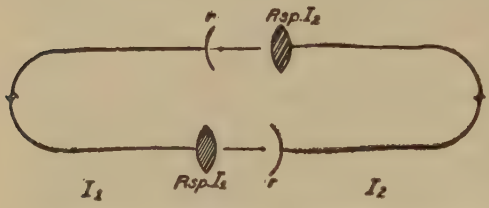

FIGURE 12. DIAGRAM OF CIRCULAR SOCIAL BEHAVIOR

The response of the second individual (*Rsp. I2*) to stimulation afforded by the response of the first (*Rsp. I1*) becomes in turn a stimulus for continuing or increasing the response (*Rsp. I1*) of the first. *r* denotes a receptor.

Direct and Contributory Social Stimuli. The second question in the classification of social behavior concerns the part which social objects play in the total stimulation of the moment. If a social stimulus holds the focus of attention and maintains exclusive control of the final common paths of response, we may speak of it as a *direct* stimulus. The reaction follows directly from the nature of the stimulating object. It is not modified by any other object. The advice of our lawyer or physician in matters important to our welfare is likely to have the value of a direct social stimulus. The concentration of the hypnotist's subject upon the suggestions of the hypnotizer is an example *par excellence* of the direct relation. Direct social stimuli are very common in both linear and circular behavior. Of the examples cited in the preceding section the transmission of orders illustrates the first possibility, and conversation the second. Almost all of the more common and conscious

social influences are exerted through direct stimulation dominating exclusively the response mechanism of the individual.

There are many situations, however, in which the social environment affords only a part of the group of objects which are acting as combined stimuli. The principle of allied and antagonistic reflexes (p. 37) gives the neural foundation for this sort of reaction. The response is called forth and controlled mainly by a stimulus which may be non-social in character. The social stimuli present in the environment at that moment serve only to modify, redirect, augment, or diminish this response. They may be said to be *contributory* to the main, or direct, stimulus. When we satisfy our keen hunger by a meal in solitude, we are reacting to a simple non-social stimulus, the food. When eating at a dinner party, the presence and behavior of the other guests are contributory social stimuli which modify our somewhat primitive and hungry attack upon the meal. Observations of crowds afford the best examples of this situation. In the attack of a mob of revolutionists upon a flag, or the looting of a store by a crowd, the principal object (the flag or store) is non-social. Its stimulating effect upon each individual is, however, greatly augmented by a large number of contributory social stimuli such as the cries, facial expressions, and movements of the other participants. In many crowds these social stimuli are contributory to another social stimulus of direct character, namely, the voice and gestures of the crowd leader. Direct and contributory stimulation from human beings are conjoined in a similar manner in many situations of life.

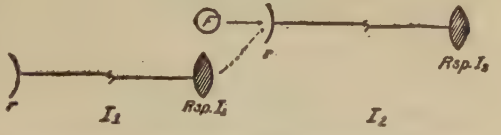

FIGURE 13. DIAGRAM OF CONTRIBUTORY SOCIAL STIMULATION IN LINEAR SOCIAL BEHAVIOR

Rsp. I1, the response of the first individual (I1), constitutes a social stimulus which contributes to the effect of a non-social stimulus *F* in evoking the response, *Rsp. I2*, of the second individual (I2).

Direct social stimuli in both linear and circular behavior may be adequately represented by the diagrams of Figures 11 and 12. Contributory stimulation of the *linear* type is suggested in Figure 13, in which the response of the second individual to the direct

non-social stimulus, *F*, is modified by contributory stimulation from the reponses of the first individual.

Contributory stimulation in *circular* behavior is well illustrated by the crowd situation. Let us imagine a panic due to a fire in a theater. For simplicity we may consider only two individuals of the crowd, I_1 and I_2. Both these persons run away from the fire; but I_2 sees I_1 running, and this increases his own running response. I_1, in turn, sees I_2 run, a fact which has a similar effect in speeding up the running of I_1. The increase in speed which I_1 received from seeing I_2 run (over that due solely to the fire) thus makes the running of I_1 a *stronger* agent in restimulating I_2. I_2 is thus stimulated: first, by the fire (direct and non-social stimulus); secondly, by seeing I_1 run from the fire (contributory social stimulus); and, thirdly, by seeing I_1 run faster because he (I_2) also is running (circular operation of contributory stimulation). A similar effect is produced upon I_1.

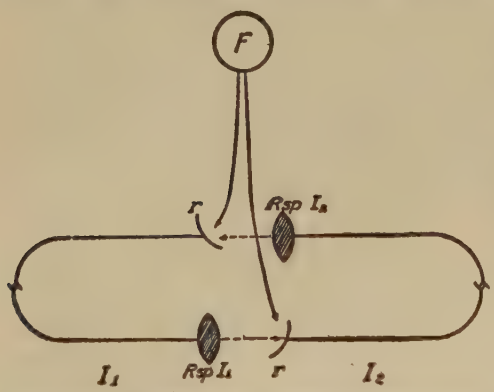

FIGURE 14. DIAGRAM OF CONTRIBUTORY SOCIAL STIMULATION IN CIRCULAR SOCIAL BEHAVIOR

Two individuals, I_1 and I_2, are both responding to a direct non-social stimulus, *F*. The response of each is modified, however, by the response of the other, which serves as a *contributory* social stimulus and increases the reaction by *circular* reënforcement. For further explanation see Figure 12, and text.

Figure 14 suggests schematically this situation. The direct, non-social stimulus, the fire, is denoted by *F*. Arrows, in unbroken lines, show that it directly stimulates the receptors (*r*) of I_1 and I_2, evoking the responses, *Rsp.* I_1 and *Rsp.* I_2 respectively. These responses now act as contributory stimuli (see dotted-line arrows) by which I_1 and I_2 stimulate each other in conjunction with the direct stimulation *F*, and intensify each other's responses in the manner described above. A fuller exposition of behavior in crowds will be given in a subsequent chapter.

Controlling and Self-Adapting Social Behavior. There remains the third point of view in our classification, namely, that of phylogenetic development. Among the invertebrates and many of the lower vertebrates the creatures who produce sounds or movements which serve as stimuli to other animals are not aware of the stimulating effect of these responses. Actions such as the gnashing of teeth, and the ejaculations accompanying the sight of food and sex objects, and other emotional situations are purely incidental. They belong to the total reaction which the creature would make to the same situation in solitude. By the process of conditioned response, other individuals learn to associate these reactions with the important events which they accompany. They therefore acquire value as social stimuli for those that hear and see them long before they have any social significance for the individuals who produce them. Intercommunication is thus in a 'halfway' stage of development. At this stage each individual limits his social adjustment merely to adapting himself to the social environment by learning how to respond to the various stimulations which that environment affords.[1]

But in the course of evolution a stage of adaptability is reached in which the organism is able to profit by the effects produced upon others by his own behavior. Suppose, for example, that a certain monkey has food, and that another monkey in the same cage, who is hungry, has none. A definite problem faces the second monkey — how to satisfy the prepotent hunger reflexes. In accordance with trial and error he tries every method known to him. He may attempt to take the food either by force or by stealth; he may attack the monkey in possession of it; or he may threaten him with loud chattering and a show of teeth. If the last method is the successful one — that is, if it causes the other to drop the food and run — it will be readily 'fixated' as the social stimulus to be produced in situations demanding the control of the food and the behavior of others. The value of social stimuli for life adjustments is thus learned by the individual who makes them. The control of

[1] The term 'self-adapting,' chosen to denote this type of social behavior, is not highly satisfactory because all social behavior has a value for adaptation. It may serve, however, to distinguish this stage of progress from that in which the individual has learned to control *others*.

the social environment in this example probably rests upon the conditioning of the prepotent withdrawal reflex (and flight habits) in the one to be controlled by the terrifying behavior of the individual exercising the control. The first animal has learned that such social stimuli mean danger; therefore he withdraws when he sees them.

Among both mankind and the lower animals it is generally the stronger individuals who are the best able to control others through their behavior. The weaker and the less attractive must be content with the subordinate rôle of adapting themselves to social conditions which they are powerless to alter. In evolutional development the highest point of controlling social behavior has been reached by man in the perfected communication made possible by language.

For a more complete account of the development through self-adapting to controlling social behavior, we must turn to specific examples selected from various levels of the animal kingdom.

Social Behavior in Animals

The Lower Forms of Life. Adjustments based on Difference of Structure. Only in the most general sense can the behavior of the more primitive forms of life be described as social. There is no true response to stimulation from the activity of individuals, but only to the morphological characteristics by which different species satisfy or supplement one another's vital needs. Parasites of the protozoan and worm phyla find that the body of their host provides a supply of nourishment for themselves and their progeny. 'Symbiosis' is the term given to a form of association in which the advantage to the participants is mutual. Certain bacteria which thrive on the roots of plants render the latter valuable service because of their ability to extract needed elements from the soil. The *convoluta*, a marine worm, harbors a symbiotic alga (plant) which is essential to its own metabolism. A somewhat more highly evolved relationship exists between detached organisms, the development of whose structures has been determined by their mutual service. The insect, for example, has receptors which are stimulated by the color and odor of the flower. He has also a long

tongue capable of reaching the honey in the flower's corolla and so obtaining his nourishment. His back and legs are adapted for carrying pollen, thus enabling the plant to reproduce. This adaptation of structure to the social environment is often a means of sharing the food supply of another animal, a relationship known as 'commensalism.' Certain species of small fish obtain transportation to food supplies by attaching themselves with sucker-like proboscis to larger fishes. The domestication of animals by man may be regarded as a kind of commensalism in which the structure of one commensal has been somewhat modified by artificial selection and his habits rendered serviceable to the other by training.

Insects and Allied Forms. The insect group combines the primitive response to morphological characteristics with true social behavior. Differences of structure exist among the members of a single colony or species (polymorphism). Among the ants there are the queens, or fertile females, the workers who are sterile females, and the fighters, ants equipped with powerful jaws. There are also smaller insects, called aphids, which are protected in the colony for the nutritive secretion which they provide as food for the ants. Each of these different genders or types assumes a share of the total work of the colony. Each is also reacted to in a characteristic manner by the others. The queen is protected and sheltered, the aphids are touched upon the antennæ to make them disgorge their secretion, and the larvæ are carried and deposited where they can obtain food. A similar division of labor and difference of treatment are found among the queens, drones, and workers of a hive of bees.

But insects also respond to the presence and behavior of one another in a manner not determined by polymorphism. Social stimuli are received through at least four different senses, namely, smell, touch, vision, and hearing. Ants recognize their nest mates by their particular odor, and attack intruders who emit a different odor. They also follow the trail of leaders to a food supply by the use of the same sense. Moths in particular make use of the sense of smell in the recognition of sex, the male being able to scent the location of the female at a great distance. Touch is used for social stimulation in the stroking of the aphids by the feelers of the ants.

This is one of the most primitive instances of controlling social behavior in the animal kingdom. At times there spreads rapidly through the colony a wave of excitement, large numbers of individuals falling upon a group of intruders who are no longer tolerated in the nest, rushing out to battle with an invading horde, or going out to bring in food. It is believed that this spread of stimulation is brought about by the strokes of the feelers; and some observers have alleged a kind of language of minute taps indicating different situations such as food and danger. This mass phenomenon seems analogous to the spread of excitement in a human crowd. There is a multiplicity of contributory stimuli having perhaps a circular effect within the group. Communication, however, is probably that of the 'halfway' or self-adapting type, rather than that of social control which the use of true language makes possible.

Visual and auditory social stimuli are no doubt important in insect communities, though they are at present little understood. On certain occasions, such as the death of the queen bee, an agitated humming spreads throughout the hive. The chirping of crickets is believed to afford a means of sex recognition among those insects. The hunting activities of other members of the arthropod group prove clearly the value of sight in responding to behavior stimuli. The hermit crab has been observed in the act of stalking a sand-flea, dropping down quickly whenever the prey showed uneasiness, and creeping closer when opportunity offered itself.

A particular contrast in behavior, namely, that between the active and passive, is the source of many important responses of animals. Among minute forms of crustaceans (crablike animals), such as the amphipods, as well as among higher animals, this contrast is the basis of sex recognition. Male amphipods instinctively seize and carry about the females, who in turn roll up and become passive burdens. If two males collide they try to carry each other, and resistance is offered by each. If two females meet, both fall into the passive attitude for a time. The sexes do not recognize each other either by sight or by odor, but only by the characteristic behavior 'felt' when two accidentally collide. Males which have been mutilated by the experimenter so that they become

relatively inactive are seized and carried about like females when encountered by active males.

Vertebrates. The insect group and the higher vertebrates, such as birds and mammals, each have a form of community life which favors the development of an intricate social behavior. The former group forms coöperating hives or colonies, and the latter live in true families. The less gregarious lower vertebrates have little occasion for the development of social contacts. Fish recognize the opposite sex by sight or by behavior, or else by a combination of both methods. They seize smaller members of the same class as prey and avoid the larger individuals. The strong clasping reaction of the male frog succeeds in getting for its object a female, though the exact basis of the discrimination is not known. Frogs, though possessing a sense of hearing, appear indifferent to most sounds. The croaking of their own kind is probably, however, an important stimulus in connection with breeding activities.

In marked contrast with these lower forms is the richness of the social life of birds and mammals. Dogs and cats are quick to detect the meaning of expressions and attitudes either in their own species or in human beings to whom they are accustomed. Curiosity and fear are readily aroused in the finer breeds of these animals by similar behavior of their human associates. There should be mentioned also the high social adaptability of animals shown in the extent to which they may be trained by man. The response to social stimulus marks a distinct progress in educability supplementing the use of punishment and reward. Trained horses such as Clever Hans have learned to tap the correct answer to amazingly difficult problems of arithmetic, not, as alleged, by calculation, but by detecting the small and entirely unconscious movements of the observers when the correct number was reached. These social stimuli were so minute that for some time they entirely escaped the notice of investigators. Widespread effects of multiplied stimulations which are probably also circular are well known in groups of higher vertebrates. Herds are easily thrown into a panic when a few of the members become alarmed. The safety of a flock of wild birds depends upon the same susceptibility to the social influences. Where birds are confined together, any alarm, such as the

flapping of wings at night, spreads quickly throughout the entire enclosure.

The higher vertebrates are not only skillful in adapting themselves to a variety of social stimuli, but many of them have learned the use of their own behavior as a means of control of others. Dr. Craig describes the fighting of many animals as a kind of ceremonial which precedes and often obviates a more serious conflict. By blustering and assuming a warning attitude the opponent is frequently driven away without the necessity for doing him injury. Birds and mammals frighten away intruders by making feints, ruffling the fur or feathers, hissing, growling, and roaring. It is probable that originally the actual attack was made, and that animals then rapidly learned to react to the hostile display which just preceded the attack as a conditioning stimulus, withdrawing from the sight of the claws and teeth as they would from the actual injury inflicted by them. Finally the animals who attacked learned that an actual assault was unnecessary, since the mere show of fighting sufficed to repel the antagonist. As we have seen in Chapter III, the law which governs the learning process is that of the fixation of the most economical method of satisfying the prepotent demand. Hence the actual duel, destructive to both contestants, is replaced wherever possible among animals by domination through social stimulus.

Play attitudes are based upon the same principle. Control by threatening attitude and gesture, by swaggering, and by exhibition of power is the theme of many play attitudes both animal and human. The 'bowing and scraping' of dogs in a ceremonious play fight suggest the effort to overcome the enemy by a stealthy feint. Feigning is, indeed, a means of social control remarkably developed among animals, and far exceeding as an indication of intelligence their ability to control the non-social environment. A small female kitten is reported, on good authority, to have played the following trick on her brother who lay stretched out asleep on the floor. Beginning at the brother's tail she began gently licking his fur in an ingratiating manner, working gradually up toward his head. When she had reached his neck she gave a spring and sunk her teeth into his ear causing him to give a tremendous leap and a cry of pain.

Unlike the control exerted through a threatening attitude, the feigning method requires the use of decoy behavior entirely different in character from the hostile intent beneath. In terms of human experience this form of control is based upon an understanding of the psychology of the one to be controlled. The understanding, however, was probably acquired, like the use of the fighting ceremonial, through the trial-and-error method of learning. It is an evidence of a more perfect social adaptability and a higher stage in the learning process.

So-called death-feigning appears to be nearer to the level of innate reflexes than that of advanced learning. Such behavior is probably purely instinctive, and the animal cannot be said actually to 'feign' in a human sense. Insects and crustacea furnish many examples of rigidity and apparent lifelessness upon being molested. Birds and mammals make similar responses. The form of control exercised by this behavior is not always clear. Its significance as a social stimulus may be accepted in some cases only in a negative sense. By immobility the animal avoids giving any stimulus at all, and thus escapes becoming the prey of a larger animal. In other cases, for example among monkeys, the attack of a more powerful animal is often successfully countered by assuming a lifeless attitude which suggests the passivity of the female. Submission, whether it produces a sexual reaction or not, is apparently an important means of escaping injury through pacification of the enemy.

There are two groups of higher vertebrates whose behavior among their own species has been sufficiently studied to deserve special consideration. They are the pigeons and the sub-human primates.

The Social Behavior of Pigeons. It is well known that pigeons are quick to respond to one another's attitudes. A single boy with a bag of corn in almost any public park can draw a great flock from all directions in less than three minutes. The behavior of other pigeons, rather than the actual sight of the food, is without doubt the initial stimulus operative upon a large number of the birds, Although pigeons do not distinguish one sex from the other by sight, they soon learn to recognize particular birds. After four

weeks of life a pigeon will behave in a friendly manner toward individuals brought up with it, but will regard others with fear or distrust. A pigeon recognizes its particular mate among others of the same sex, and coöperates with the mate in driving out intruders from the nest.

Sex recognition occurs among pigeons only through behavior. An unmated ring dove, for example, when it meets a strange dove becomes excited, charges up and down bowing and cooing, and behaves aggressively toward the other bird. If the latter is a male, he behaves in the same way, and a fight is likely to ensue. If the other is a female in season for mating, she coos seductively and assumes a submissive attitude toward the male. In the absence of true mates a male in season will sometimes attempt to carry on the breeding cycle with a less aggressive male; or a female will play the passive rôle with a stronger and more active female. Here, as in the case of immature human beings, homosexuality is merely an approximate and imperfect adjustment of the internally stimulated reflexes of sex.

The aggressive behavior of the male dove is a kind of control which causes the strange bird to react in a manner which reveals its sex. Submissive behavior also, as noted in an earlier paragraph, has a certain power in determining the responses of the more powerful. A pigeon will sometimes attempt to maintain a desirable position on the perch by force, but that method failing or incurring retaliation, will fondle the rival and attempt to beguile him with wiles of a female character. It thus follows that the extremes both of ascendance and submissiveness have their value in the adjustment to the social environment. Creatures thus tend as rapidly as practicable to assume either the active or the passive rôle. We may call this fact the *law of polarity in social contact*. It was recognized in the chapter on traits of personality, and it will have a place in later discussions. Among pigeons the law is demonstrated by the fact that a bird, if attacked at bay, will either offer resistance of the most desperate character, or, if overpowered, will submit and allow itself to be maltreated mercilessly.

The Social Behavior of Apes and Monkeys. Gorillas and chimpanzees in captivity show an extraordinary ability to interpret and

respond to the words and facial expressions of human beings. They are apt in interpreting motives and judging character. Their ability to play tricks upon one another and to take advantage of an opportunity to gain their ends by stealth are well known. Gestures are well developed among the anthropoids. Chimpanzees express refusal, or enmity, like human beings by pushing the hand from the body outward toward the object. Acceptance is denoted by holding out the hand extended toward the object. These movements probably fall in the class of controlling behavior. They are merely abridgments of the acts of rejecting and taking, and come into use just as the fighting ceremonial which is really an abbreviated form of attack. The human infant controls his social environment by precisely the same gestures.[1] Mr. Garner, an intimate student of apes in their natural habitat, believes that they have a language consisting of about twelve sounds, which they use to indicate definite situations such as danger, food, sex play, water, moving object, and others. These sounds, however, are more likely to be mere ejaculations forming a part of the total visceral and somatic response to the object. While their meaning is known and responded to by the apes which hear them, they are probably for the most part without social significance to the individual who utters them. An important exception must be made in regard to the sounds of wooing or invitation to sex play. In cases where an individual requires a certain form of behavior from others as a satisfaction of his needs, a word denoting the activity in question is likely to come into use; and to that extent language passes from the 'halfway,' self-adapting stage to its true development as an agency for social control. Dr. Kempf and others have reported definite sex 'words' in use by monkeys. Sometimes the sound is like that of smacking the lips. Another variety is a gentle 'ee-ah.' The vocal stimulus is generally accompanied by the assumption of a posture inviting the sexual union.

This method of controlling the behavior of other monkeys is so remarkably effective that it is used not only to obtain sexual

[1] The reason for this, however, must not be sought in the mystical explanation that a child 'recapitulates' in his development the behavior of his simian ancestors. It is to be explained by the similarity of the prepotent reflexes, environmental conditions, and learning process involved.

gratification, but to achieve various other ends. A smaller monkey of either sex in possession of food, if approached by a stronger individual who desires the food, will sometimes make the sex sounds and assume an inviting posture. This behavior appeals to the other in a sexual way and makes him forget the food, which is retained and eaten by the weaker. Sex decoys of the same sort are used to obtain leniency or protection when chased or bullied by larger monkeys. A kind of death-feigning reaction also is used by monkeys as a means of obtaining immunity from attack. They either assume a catatonic rigidity or a passive attitude in which the limbs remain in whatever position they are placed. The latter form resembles the *cerea flexibilitas* of certain human psychopaths.

It will be seen that the control exercised by the weaker individuals generally follows the principle of appealing to a different desire of simian nature as a ruse. An approaching response is evoked from the stronger monkey, and his behavior is turned in another direction. The weaker monkey, so to speak, 'changes the subject.' The domination exerted by the more powerful, on the other hand, is direct and aggressive. It is based upon the arousal of *withdrawing* reactions in the controlled ones. A number of monkeys in a cage were observed as to their behavior when fed. The stronger individuals usually seized the food and began eating it. If the weaker ones attempted to get the food or approached too near, they were severely punished and chased into a corner where they nursed their wounds with their backs turned to their superiors. This posture was indicative of entire subjection and absence of predatory intent. Originally established as a conditioned withdrawing response, it came to be exacted of all the smaller monkeys on pain of injury as soon as food was thrown into the cage. Punishment in advance is indeed a novel and effective form of social control.

A rare instance of intelligence in exploiting the mental characteristics of another for personal gain is reported by Dr. Kempf from the same group of monkeys. Monkey D, a timid though not very intelligent monkey, was eating some food desired by monkey E. When approached by the latter, D would become suspicious and run to another part of the cage. E then began to simulate indif-

ference, and to scratch about in the sawdust apparently searching for food of his own. At the same time he glanced cautiously back over his shoulder, and worked his way casually backward as he searched until within grasping range of D's morsel. He then turned, shot out the arm nearest D, and snatched the prize. Other monkeys speedily learned to respond to E's strategic behavior; but D, who was evidently a socially stupid monkey, never made the adjustment.

Living in an environment of their fellows, monkeys, like men, exhibit distinct personalities. One of the younger individuals of Kempf's group was weak, sensitive, happy, affectionate, and timid. Another, also young, was bold, inquisitive, and aggressive. A third was irascible, sexually cruel, and unpopular. Each monkey stood in a definite relation to every other according to whether he was able to take food away from them or had to give it up himself. This relation was determined either from the start by differences of strength and aggressiveness or by experience. A smaller monkey would habitually dominate a larger one if he had once succeeded in robbing the latter of his food. Polarity in the extremes of ascendance and submission was thus apparent between individuals in the 'hierarchy' of domination by food-taking.

Sociological Aspects of Animal Behavior. Social behavior in the precise sense of making and responding to social stimuli develops hand in hand with permanent and organized group life. It would be difficult to say which was genetically the more fundamental. In order to complete the picture of the social development which has led up to modern human society, it is expedient to turn from specific stimulus and response to the broader sociological considerations of animal life. Society is now generally believed to have originated in the family. We do not need an instinct of gregariousness to account for it; for gregariousness itself is based upon the need of keeping the family together for the protection and training of the young until they shall have had time to fit themselves for life in a complex and highly evolved order.

In the lower phyla there is little evidence of parental care. Nature's purpose is fulfilled simply by endowing creatures with instincts to lay their eggs in places where the young when hatched

will obtain food and protection. In certain species of spiders the mother carries the young after they are hatched by allowing them to cling to her body. The social insects feed and tend their larvæ with great care. Actual recognition and care of the young, however, does not occur below the higher vertebrates, with the exception of a few species of nest-building fish, and certain fish who remain a short time in the vicinity of the young. Amphibians and reptiles take considerable care in placing and protecting their eggs, but parental interest seldom extends to the young in the active state. Incubation of eggs, which is universal among birds, seems to have had its feeble beginning among reptiles, and was a prerequisite for the evolutionary change from eggs which did not require heat to eggs which did. Accompanying the weak and extended infancy of birds and mammals we find a true family life, one, and, in many cases, both parents remaining constant in the feeding, protection, and training of the young until they are able to shift for themselves. The duties of bearing and rearing a family often require coöperation and division of labor. One parent stays with the eggs or young while the other goes in search of food. In mammals the milk-secreting organs have developed as a direct outcome of the need for prolonged care and nourishment of the offspring.

Family groups form the bases of societies in various ways. The insect colony is often one polymorphic family descended from a single queen. Among the social vertebrates there exist either extended families (comparable to human kinship clans) or aggregations of distinct families brought together by their need of food and protection, needs which among certain species are best fulfilled by gregarious life. This latter type of community, which most closely resembles human societies, is typical of monkeys. The higher anthropoids, because, perhaps, of the need of a larger quantity of food, are inclined to live in solitary family groups. A chimpanzee family usually consists of a male with three or four females and ten or twelve young. Sometimes several such families live together under a patriarchal head.

Many sociologists believe that the tender feelings originating through sex and sensitive zone reactions within the family are the

origin of that altruistic regard for others which makes organized society possible. The evidence of deep emotions both conjugal and parental among the higher mammals are often touching. A gorilla will fight to the death to protect his young from beasts of prey. Maternal devotion is no less marked. Professor Yerkes describes the grief of a mother monkey for her dead baby. She persisted for several weeks carrying the dead body about with her wherever she went. Grief for the loss of young has been known to cause the death of females of certain species.

Within the larger groups in which the interests of the whole transcend the narrower family responses, animals afford many examples of coöperation, and often, like human beings, make real sacrifices for the welfare of the group. One of the simplest forms of coöperation, aside from the more primitive division of labor based on polymorphism, is the taking of positions in such a way as to allow the best coördination among the individuals of the group. Biologists speak of this behavior as "spacing out." In a flock of flying geese each goose maintains an exact distance between himself and the goose ahead of him. Robins searching for worms on the lawn keep at a fairly constant distance from other robins. The migrations of schools of fish and of herds of animals of many kinds are conducted with orderly spacings between individuals. Penguins march well spaced in single file. Various kinds of birds allow regular intervals between their nests and the nests of others of their species.

Coöperation in the stricter sense of each doing his share in a common labor is illustrated as low in the phylogenetic scale as the ants. The cutting and carrying of leaves into the nest for the use of the larvæ of certain species is accomplished by the common effort of many individuals. Ants which inhabit India and Ceylon cooperate in fastening leaves together with silken threads to serve as receptacles for the larvæ. In a colony of beavers each member not only builds his own house in orderly sequence in the bank, but also does his share in felling trees and in the labor of constructing the dam. The posting of 'guards' or 'sentinels' constitutes another form of coöperation among animals, and indicates both a high degree of social control and a keen susceptibility to social stimuli

in the group concerned. It is stated by observers of penguins that these birds when they go in search of food leave a kind of 'nursery guard' consisting of the adult birds having no offspring, who form themselves in a circle about the little penguins. Protective coöperation has also been observed among the anthropoids. A remarkable form of 'communal dance,' called a *kanjo*, occurs among free chimpanzees. A number of these apes join their efforts in making a sort of clay drum by beating down a surface of clay over a peat bog. When slapped this surface gives a hollow sound. They then begin the 'dance' by leaping up and down on this drum and shouting. They jump higher and higher and become noisier as the dance proceeds, until the limit of their powers is reached. There is doubtless a strong circular effect from the rhythmic contributory stimuli, each chimpanzee inciting others and in turn being incited to wilder activity.

Social evolution, which has produced among men a long history of civilization, is practically unknown among infra-human animals. In order that one generation may profit by the experience of the preceding, that experience must be reduced by language or by the use of tools to some permanent form. Social heredity, the product of human thought, labor, and social life, must supplement the germ cell heredity in the life of the individual. Only by this means can the work of individual genius survive to benefit the race. Although inventiveness or genius is hard to discern among animals, they are not altogether without a social inheritance. We have already noted that among some groups of birds and mammals the fear of ancient and predatory enemies of the species is not inherited, but must be handed down through the behavior of the parents as a 'social tradition.' Perhaps the best example of social heredity among animals is the acquisition of the song characteristic of species of birds through the association of the young birds with the older ones. Orioles reared in isolation from their own kind develop a song of their own unlike the cadence characteristic of the oriole. By being reared with adult canaries, sparrows have been made to acquire a song resembling that of the canary.

Conclusions. Our study of the social activities of animals has revealed that in species not lower in the scale than insects indi-

viduals respond to the presence and behavior of one another in a manner which aids their life adjustments. For the most part this social behavior is direct and linear, one individual simply reacting to another. Occasionally in their group activities animals afford contributory stimulation to one another; and in a few situations, no doubt, the effect of one individual's response comes back to him in the increased activities of his fellows. Circular behavior is thus present, though comparatively rare, among animals.

We must not suppose that the responsiveness to social objects develops to any large extent as a 'social instinct.' Originally all signs or actions which were of value as social stimuli acquired that value because they were either (1) associated with food, (2) used as a means of recognizing sex, or (3) interpreted as an indication of ensuing danger. The inborn prepotent requirements *of the individual* were thus the source of social behavior. The lower forms have progressed only to the point of adapting themselves to the signs unwittingly afforded by their fellows. The method here employed is that of the conditioned response. Birds and mammals have acquired controlling social behavior. In learning their social adjustments they have been able to substitute abridged responses of hostility, sex, or other behavior as signs by which to persuade, coerce, or divert their associates. The most intelligent of infra-human animals, the monkeys, have shown an aptitude for controlling their fellows by misleading social stimuli.

Probably the most important connection between the social behavior of animals and that of man is the capability for social control. Among human beings domination is exercised with vastly more potent result by language, custom, tradition, and social institutions. The finer *nuances* of human feeling are played upon, just as the stupid credulity or the sex interest of one monkey is exploited by another. This austere interpretation of society is, however, mollified by the consideration that human beings have come to enjoy social behavior in and for itself; and that the tender responses of family life, already conspicuous among the higher animals, represent true driving forces in social conduct. Control of individuals is coming to be exercised in the interest of the group as a whole rather than for the exclusive profit of the more cunning and powerful.

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CHAPTER VIII

SOCIAL STIMULATION — LANGUAGE AND GESTURE

Forms of Social Stimulation. The social behavior of human beings falls naturally into two classes. The first class comprises that behavior which affords stimulation to others; while the second consists of the characteristic responses which one makes to such stimulation. In the present chapter and the following one we shall discuss the first of these two classes; that is, we shall examine the behavior of the individual in its capacity for stimulating others to react. The forms of social stimulation may be classified in a number of ways. They may be treated according to the sense organs by which they are received, such as 'auditory' for languages and cries, 'touch' for pressures in a crowd, and so on. Or they may be grouped according to whether they are usually 'direct,' as language in conversation, or 'contributory,' as facial expressions and movements of others in a crowd. Some stimuli also are used for social control (language, gestures), while others merely enable us to adapt ourselves to the presence and characteristics of those who provide them (sight of others, physiognomy). For convenience, however, the most important forms of stimulating human behavior may be classified under the three main headings of Table III. This table makes use also of the principles of classification just mentioned.

In this chapter we shall consider the first and most important group of social stimuli, namely, vocal expression — both that of inarticulate sounds and actual speech. Because of their close genetic relation to language, gestures will be included in the same discussion.

The Physiological Basis of Vocal Expression

The Organs of Speech — General View. Audible speech is made up of two components, tone and noise. The structures for producing them are located in a succession of air passages leading from the lungs to the lips. Tone is set up by the expired air current

setting into pendular vibration the vocal cords of the larynx. Noise results from non-pendular vibrations produced by frictions or explosions of air currents at various parts of the mouth cavity. A general view of the organs of speech in longitudinal section is seen

Table III. Social Stimuli

Type of Stimulating Behavior	Receptor	Effect upon Reactor
I. Vocal Behavior Inarticulate Sounds Language	Ear	Direct Controlling
II. Facial and Bodily Behavior Facial and Bodily Expression in Emotion Facial Posture in Repose (Physiognomy) Bodily Posture Movements Gestures	Eye	Direct and Contributory Controlling and Self-Adapting
III. Minor Stimulations (Non-Expressive Behavior and mere Presence) Sight of Others, Contact, Noise, Odor, Humidity, etc.	Various Exteroceptive Senses	Contributory Self-Adapting

in Figure 15. The expired air from the lungs passes through the *trachea* (windpipe) into the *larynx* (Figure 15, *23*) where, the *vocal cords* (*4*) being properly adjusted, it produces a tone. Issuing upward through the *vestibule* of the larynx (*20*) it is deflected upward and backward by the *epiglottis* (*18*), and passes into the *pharynx* (*19*) and thence out through the *oral* or mouth *cavity* (*12*).

During speech the velum, or *soft palate* (Figure 15, *15*), with its dependent projection, the *uvula* (*16*), is raised so that it extends backward until it almost touches the back wall of the pharynx. In this way the nasal chambers are cut off from communication with the pharynx, and the air current is deflected forward through the mouth. The nasal chambers are

separated from the mouth cavity also by the *hard palate* (*11*). In ordinary breathing the soft palate drops down close to the tongue, and, almost meeting the upraised epiglottis below, separates the mouth cavity more or less completely from the pharynx. The inspired air therefore passes

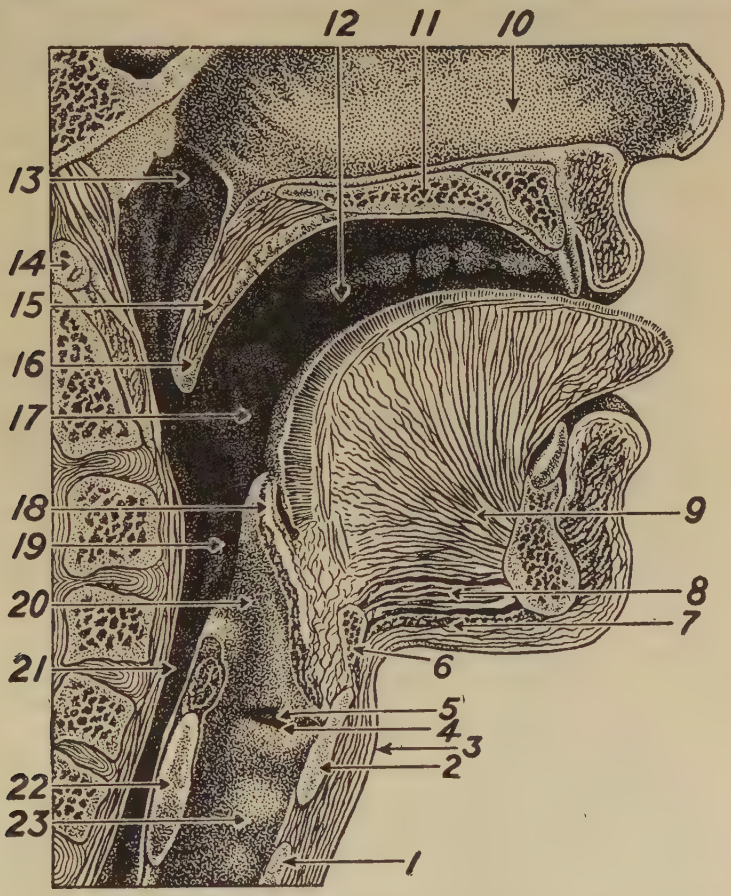


FIGURE 15. THE ORGANS OF SPEECH

1, Cricoid cartilage; *2*, thyroid cartilage; *3*, "Adam's apple"; *4*, vocal cord; *5*, ventricle of the larynx; *6*, hyoid bone; *7*, mylo-hyoid muscle; *8*, genio-hyoid muscle; *9*, genio-glossus muscle; *10*, nasal septum (dividing the nostrils); *11*, hard palate; *12*, mouth cavity; *13*, nasal pharynx; *14*, anterior arch of atlas; *15*, soft palate; *16*, uvula; *17*, tonsil; *18*, epiglottis; *19*, laryngeal pharynx; *20*, vestibule of larynx; *21*, œsophagus; *22*, cricoid cartilage; *23*, interior of larynx.

(Adapted with slight changes from Watson's *Psychology from the Standpoint of a Behaviorist*, J. B. Lippincott Company, publishers.)

through the nostrils, down the pharynx (*13*, *19*), into the larynx and trachea, finally reaching the lungs. In expiration it follows the same course. The epiglottis is a movable fold. It is lowered closing the entrance to the larynx during the swallowing of food. It is raised during respiration and speech.

The Larynx. The larynx consists essentially of a cartilaginous framework, or box, roughly cylindrical in shape, with both ends

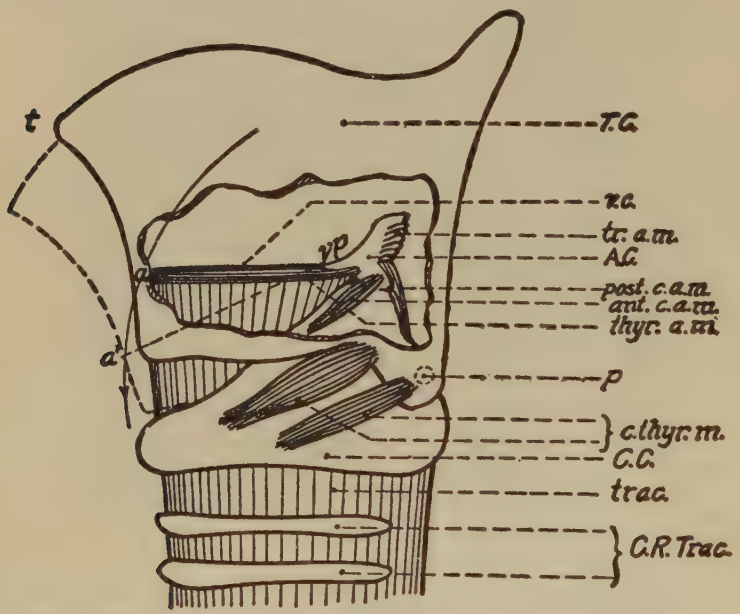


FIGURE 16. DIAGRAMMATIC VIEW OF THE LARYNX (*from the left side*)

A portion of the thyroid cartilage has been cut away to show internal structures. *T.C.*, thyroid cartilage; *v.c.*, vocal cord; *tr.a.m.*, transverse arytenoid muscle; *A.C.*, arytenoid cartilage; *post.c.a.m.*, posterior crico-arytenoid muscle; *ant.c.a.m.*, anterior crico-arytenoid muscle; *thyr.a.m.*, thyro-arytenoid muscle; *p*, joint of the thyroid upon the cricoid cartilage; *c.thyr.m.*, crico-thyroid muscle; *C.C.*, cricoid cartilage; *trac.*, trachea (wind pipe); *C.R.trac.*, cartilaginous rings of the trachea; *vp*, vocal process of the arytenoid; *a*, point of attachment of the vocal cords to the interior of the thyroid cartilage. *t* represents a prominence of the thyroid cartilage seen externally as 'Adam's apple.'

left open. Two cartilages form the main part of this framework. The upper and larger one is the *thyroid*. It is not a complete cylinder, but is open behind; and is between the shape of a U and a

V in cross-section. It is placed above the smaller *cricoid*, or signet-ring-shaped cartilage; and its sides project down and enclose the latter posteriorly, making a joint upon which it is free to rotate back and forth. Across the interior of this framework are stretched two elastic folds of mucous membrane, the *vocal cords*, which, being continuous with the lining of the trachea and larynx, form with this lining a kind of roof over the windpipe, with an adjustable slit, the *glottis*, lying between the cords. The thyroid cartilage is represented from different viewpoints in Figures 16 and 17, *T.C.*, and in longitudinal section in Figure 15, *2*. The cricoid is shown in Figures 16 and 17, *C.C.*, and in Figure 15, *1*, *22*. The pivotal joint of the thyroid upon the cricoid is located at *p* in Figure 16. The vocal cords are designated in Figure 15, *4*, and in Figures 16 and 17, *v.c.* Figure 17, *G*, shows the position of the glottis.

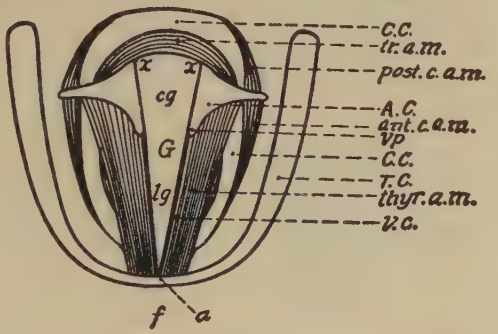


FIGURE 17. DIAGRAM OF THE LARYNX (*as seen from above*)

The shaded portions represent muscles; the unshaded, cartilages. *C.C.*, cricoid cartilage; *tr.a.m.*, transverse arytenoid muscle; *post.c.a.m.*, posterior crico-arytenoid muscle; *A.C.*, arytenoid cartilage; *ant.c.a.m.*, anterior crico-arytenoid muscle; *vp*, vocal process of the arytenoid; *T.C.*, thyroid cartilage; *thyr.a.m.*, thyro-arytenoid muscle; *v.c.*, vocal cord; *x*, point of articulation of the arytenoid upon the cricoid cartilage; *G*, glottis; *cg*, cartilaginous glottis; *lg*, ligamentous glottis; *a*, point of attachment of vocal cords to the thyroid cartilage. *f* indicates the front aspect of the throat.

(Modified from Von Meyer's *The Organs of Speech*, by permission of the publishers, Messrs. D. Appleton and Company, New York.)

Surmounting the cricoid cartilage is a pair of small, triangular-based, pyramidal cartilages called the *arytenoids* (Figures 16 and 17, *A.C.*). The forward points of their bases, the vocal processes (Figures 16 and 17, *vp*), serve as points of attachment for the posterior ends of the vocal cords. Each vocal cord runs from its point of attachment inside the thyroid cartilage (Figures 16 and 17, *a*) to the vocal process of its arytenoid. The portion of the glottis lying between the cords is known as the *ligamentous glottis* (Figure 17, *lg*); while the shorter portion lying between the arytenoids is called the *cartilaginous glottis* (Figure 17, *cg*).

A fair understanding of the functions of the larynx may be gained from three lines of inquiry: (1) How is this mechanism, which serves ordinarily for noiseless breathing, converted into a tone-producing instrument? (2) What determines the pitch and loudness of the tones produced? (3) How do the larynx and related structures coöperate in producing vowel sounds?

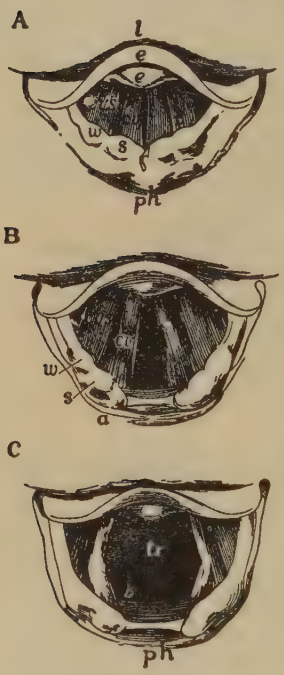


FIGURE 18. LARYNGOSCOPIC VIEWS OF THE LARYNX WITH DIFFERENT POSITIONS OF THE GLOTTIS

(*Reversed from the position of Figure 17 because reflected in the laryngoscope*)

A, while singing a high note; *B*, in quiet breathing; *C*, during a deep inspiration. *l*, base of the tongue; *e*, parts of the epiglottis; *ph*, pharynx; *w*, *s*, swellings caused by small cartilages above the arytenoid; *cvs*, roof of the ventricle of the larynx; *cv*, vocal cord; *a*, summit of the arytenoid cartilage; *tr*, trachea; *b*, beginning of bronchial tube.

(From Quain's *Anatomy*, after Czermak, by courtesy of Messrs. Longmans, Green and Company, New York and London.)

Laryngeal Tone Production. When the glottis is open, as in Figure 18, B, it is in position for quiet breathing. Vocal utterances in this position are merely whispers, lacking in that true 'voice quality' which depends on the formation of laryngeal tones. In order to produce true speech the cords must be brought close enough together to give periodic vibrations, like reeds, when the air is driven upward between them.

This effect is produced in the following way: The open glottis is triangular in shape, being wider in the cartilaginous than in the ligamentous portion (Figure 17). The articulation of the arytenoid upon the cricoid cartilage (Figure 17, *x*) is not a definite joint. It serves either as a pivot or as a gliding surface according to the action of the controlling muscles. If its action is pivotal, and if the vocal processes be rotated inward until they meet, the ligamentous glottis will be closed, and the cords brought close together. This rotating movement is produced by the contraction of two sets of paired muscles, the *thyro-arytenoid*[1] (Fig-

[1] There is difference of opinion regarding the function of this muscle. Some authors maintain that it draws the arytenoids as a whole toward

ures 16 and 17, *thyr.a.m.*) and the *anterior crico-arytenoid* (*ant.c.a.m.*). In combination with this movement the *transverse arytenoid* muscle (*tr.a.m.*) by contracting drags the two arytenoid cartilages bodily together, so that, by a kind of interlocking action, they close the cartilaginous glottis.[1] The glottis as a whole is thus closed or narrowed, and is ready for the production of tone (Figure 18, A).

In opening the glottis the muscles just mentioned relax, and a pull is exerted by their antagonists, the *posterior crico-arytenoids* (Figures 16 and 17, *post.c.a.m.*), which, by a lever-like action about x, rotate the vocal processes outward and separate the cords. Extreme outward rotation gives a wide, rhomboidal opening characteristic of labored breathing (Figure 18, C). Inward or outward rotation about x also produces a stretching and tightening effect upon the cords. By a vertical lever action about the same point the vocal processes and cords are also raised (anterior and posterior crico-arytenoids) or lowered (thyro-arytenoids). (See Figure 16.) The nature of the laryngeal tone is probably influenced by these changes. The intrinsic muscles of the larynx, being in a continual state of tonic contraction, constitute an equilibrium of forces. Slight alterations of nerve impulse disturb the balance and produce minutely graded changes in the condition of the cords and glottis, with resulting differentiations of sound.

Pitch and Intensity of Laryngeal Tones. Variation in the pitch of the voice is produced chiefly by the action of the *crico-thyroid* muscle (Figure 16, *c.thyr.m.*). By its contraction the thyroid cartilage is either rocked forward and downward, or else pulled bodily forward, on its gliding articulation, p. An arc with p as center through a (Figure 16) describes the course taken by the point of attachment of the vocal cords (a–$\acute{a}$) when the thyroid cartilage is tilted. The straight dotted line (Figure 16, $\acute{a}$–vp) indicates the new position of the vocal cords, and shows that they are now stretched to a greater length and therefore rendered more tense. Increase in the tension of a vibrating string, of course, produces a rise in pitch.[2] The range in pitch of tones producible by the average human larynx is from two to two and one half octaves.

The tones of the larynx are enhanced in their strong, sonorous quality

the thyroid, thereby *slackening* the vocal cords. The contraction of its internal portion is also supposed to *thicken* the cord itself.

[1] The combined action of these 'adductor' muscles is much like that of a sphincter.

[2] Tension being constant, pitch varies inversely with the *length* of vibrating bodies. For this reason (that is, because of greater diameter of the larynx) the voices of adult males are pitched lower than those of females.

by a system of resonating cavities to whose confined air masses the vibrations are conducted. The ventricles of the larynx (Figure 15, *5*), vestibule, pharynx, and nasal and oral cavities are all important resonators. A high tone requires a smaller resonator than a low one. The throat and mouth passages are therefore shortened in high tones by raising the entire larynx, a movement produced by muscles connecting the thyroid cartilage with the hyoid bone above it (Figure 15, *6*). By the contraction of muscles running from the thyroid down to the sternum the larynx is lowered for low tones, and the resonating cavities correspondingly lengthened.[1]

Muscles surrounding the pharynx also coöperate in modifying resonance spaces. There are two special adjustments of the larynx, one for very high (head) tones, the other for deep (chest) tones. Head tones resonate in the head cavities, and are produced with the glottis slightly open, the cords tense and thin, and vibrating only in part. Chest tones resonate through the windpipe and chest cavity, and are made with the cords fairly lax but pressed together, and vibrant throughout their whole extent.

Intensity or loudness of voice depends on the strength of the blast from the lungs, which governs the amplitude of the cordal vibrations.

The Formation of Vowels. The vowels of speech are modified laryngeal tones of varying pitch and quality. The peculiar quality by which the various vowels are distinguished is produced by specific alterations of the size and shape of the resonance chambers. In this way a resonator is produced capable of emphasizing the particular overtones or accompanying tones characteristic of a given vowel.

In *U* (pronounced as *oo* in boot) the larynx is depressed, the soft palate highly raised, the front part of the tongue flattened and the back part elevated, and the resonance chamber further prolonged by protruding and rounding the lips. In *A* (as in f*a*ther) the larynx is somewhat raised, the mouth open more widely, the soft palate less sharply elevated, the entire tongue depressed, and the lips normal. In *O* (as in g*o*) and in *A* (*a*ll) the shape of the mouth cavity and lip positions are intermediate between those of *U* and broad *A*. *E* (as in *e*ve) employs a high-pitched, closed, and shortened resonator. The lips are drawn back against the teeth, and the tongue raised and carried forward until it almost touches the hard palate, leaving a large pharyngeal space behind. The soft palate and larynx are considerably elevated. The vowels *A* (*a*m), *E* (b*e*t), and *A* (p*a*y) form a

[1] These movements may be detected by placing the finger on the "Adam's apple" while singing the scale or pronouncing vowels of different pitches.

graded series between broad *A* and long *E*, the tongue being brought successively forward and upward, the larynx raised, the mouth opening lessened, and the lips drawn back.

Articulate Speech. Consonants. Vowels, as we have seen, are modified laryngeal tones which contribute to language that sonorous and sustained quality called 'voice.' Within the cavity of the mouth are produced the characteristic *noises* which are blended and joined with the laryngeal tones in articulate speech. In themselves these noises are weak and unsustained, serving merely to initiate or terminate the vowel sounds. They are called consonants. The most important organ for the articulation of consonants with vowels is the *tongue*. It consists of a mass of muscle tissue capable of movement in any direction, or of modifying its own shape and surface. Muscles attached to the skull, hyoid bone, and lower jaw (Figure 15, *9*) draw it respectively upward and backward, downward and backward, and downward and forward. Most consonants are produced by frictions or explosions of the air caused by bringing some part of the tongue into proximity or contact with the teeth, upper gums, or hard or soft palate.

Consonantal sounds are usually classified as *fricative* and *explosive*. The former result from the friction of the air in passing through a small opening, such as that made between the tip of the tongue and the teeth in pronouncing *th*. The latter are minute explosions caused by the air rushing in when two hermetically opposed surfaces are quickly separated. *K*, for example, is made by a sudden separation of the back of the tongue from the soft palate. Initial *p* is produced by the expired air forcing apart the closed lips. Terminal explosives (*p* in dip) are caused by the sudden clapping together of the lips or other surfaces. Fricative sounds may be prolonged for some time, while explosive sounds are momentary. Among fricatives we may further distinguish the open or *aspirate* (breathing) sound (*h*), the more closed and *stridulous sh*, *f*, or *s*, and the *vibratory r*.

The consonants are also classified according to the place where they are articulated. We thus have the *labials*, *p*, *b*, and *w*, produced by the lips; the *dentals*, *t*, *d*, *r*, *s*, and *th*, articulated as explosives or fricatives by the tongue against the upper teeth, gums, or forward hard palate; the *labiodentals*, *f* and *v;* the *marginals*, *l* and *y*, in which the tip of the tongue approximates the hard palate, and the air passes out over its sides; the *palatals*, *ch*, *j*, and *sh*, formed between the tongue and hard palate; and the *gutturals*, *k*, *g*, and *ng*, formed between the tongue and soft palate. *M*, *n*,

and *ng*, though articulated and functioning as consonants, are actually voiced elements of vowel character in which the mouth cavity is closed and the soft palate lowered, allowing the air to pass out through the nose. They are called *nasals*.

There is, finally, a distinction according to whether consonants are produced as obstructions of tone, and hence have a certain voice quality (called *sonants*), or are simply breathed or made by mouth opening and closing (called *surds*). For each place of articulation there is a pair, a sonant consonant with its corresponding surd. Thus we have *b* (sonant) and *p* (surd), *g* (sonant) and *k* (surd), etc. Table IV summarizes the above classifications.

TABLE IV. ENGLISH CONSONANTS[1]

PLACE OF ARTICULATION	ORAL				NASAL
	Explosive		Fricative		Continuous Tonal
	Surd	Sonant	Surd	Sonant	Sonant
Lips	p	b	..	w	m
Lip and teeth	..	..	f	v	..
Tongue and teeth	..	..	th(*th*in)	th(*th*y)	..
Tongue and hard palate (forward)	t	d	s	z, r	n
Tongue and hard palate (back)	ch	j	sh	zh, r	..
Tongue, hard palate, and soft palate	..	..	..	y, l	..
Tongue and soft palate	k	g	..	..	ng
Various places	h	..	..	..	..

THE GENETIC DEVELOPMENT OF VOCAL EXPRESSION

Gesture Language in Infants. The earliest form of communication in infancy is not speech, nor indeed vocal expression of any sort, but gesture. The language of gesture develops from natural and serviceable movements originally of purely individualistic significance. The head-shaking gesture illustrates the genetic process. At the beginning the baby turns his head away so as to prevent undesired substances which touch his lips from entering

[1] Adapted, by permission, from *Webster's Collegiate Dictionary*. (Copyright, 1898, by G. & C. Merriam Company, Springfield, Massachusetts.)

his mouth. This is the stage of simple *avoidance* or *withdrawing*. By conditioned response the sight of the undesirable object later calls forth the same reaction, and the effect is now avoidance in advance, or *refusal*. The movement serves as a sign which is readily understood and reacted to by the person offering the rejected substance. Since the action serves thus to control the behavior of others in a manner useful to the individual it is fixated according to the principles of arc fixation in learning. It is now *used as a sign;* in other words, it has become a gesture. The movement therefore has passed from a simple avoiding response of no social significance to a truly expressive one, valuable in the control of the social environment for the prepotent interests of the individual who uses it. We have observed the operation of this same principle in the social behavior of the lower animals. It is one of the fundamental laws upon which the acquisition of all habits of communication is based.

The final stage in the head-shaking reaction is that expressing dissent (refusal of acceptance) toward a purely declarative statement. The use of the gesture for mere *negation* in the indicative mode, however, scarcely develops until after the period of infancy. To the baby every negation is a refusal of some object or proposal: the only mode used is the imperative. Other gestures are used in infancy, such as holding out the hand toward a desired object, or tugging at the hands or clothing of an adult. They are all socially controlling stimuli of an imperative sort, established as satisfiers of prepotent demands within the social sphere.

Pre-linguistic or Laryngeal Stage of Vocal Expression. While the gesture repertory is expanding there is also progress in the strength and variety of tone produced by the larynx. The cry of the newborn child, evoked by hunger or organic distress, is weak, rhythmic, tremulous, and unvaried. The sounds most frequently heard are short *a*, as in *a*t, and *u*, as in *u*p, articulated with a few simple consonants apparently formed by random articulatory movements (for example, 'nah,' 'wuh,' 'ha,' etc.). Within the first month marked variations occur in tempo, loudness, pitch, and vowel quality of the vocal utterances — all expressive of the development and differentiation of shades of feeling and emotion.

In the crying of his son at three months of age the writer could discern at least five emotional varieties: the quick exhalations of fretting and annoyance, whining or entreating, the long drawn, detached sleepy cry, spasmodic inspirations of sobbing after hard crying, and the rasping and crescendo cry of anger. By the age of four months thwarting of efforts to feed evokes a quick and decisive anger cry. Laryngeal expression is acquired with far greater facility than the difficult movements of articulation. The baby consequently has mastered all the vowels in the language (and more) long before he can articulate them clearly with the various consonantal noises.

The laryngeal stage, or period of cries, in human expression is comparable to the vocal behavior of the lower animals. The primitive glottal reflexes and coördinations early acquired become part of the general emotional response of the individual. Among animals we have seen that these cries are responded to in appropriate ways by fellow creatures who learn their significance. Similarly in man, the early glottal sounds of infancy acquire significance for the parents as suggesting certain emotional states and needs of the child, and thus bring about the appropriate ministrations. These sounds therefore take on a social significance which is not innate either in parent or child but a product of experience in reactions between them.

As in the case of infra-human vocalization and human gesture we find here a transition from a purely individualistic emotional response to expressive behavior, that is, to behavior as a means of communication and social control. The anger cry, if found effective, quickly assumes the rôle of an infantile imperative. A spoiled child of three or four, if suddenly thwarted in his wishes, lapses into his earlier method of shouting and screaming, substituting for the unavailing word symbol the more primitive and vehement method of control by the larynx. The 'stereotyped tantrum' is a pre-linguistic form of social control. There is an early development, as the baby grows, from mere crying, through whining, coaxing, scolding, and finally yelling; all of these stages appearing before true speech habits are acquired.

Somewhat later there evolves a distinctly different wail sugges-

tive of a hopeless and 'hurt' feeling. It is accompanied by a facial expression of intense grief. Though appearing significantly in cases where strong desires are blocked by a parent, it is also evoked by severe physical pains, such as a pinched finger or bruised head. Beginning as a mere emotional outburst, it rapidly assumes a value for social control as an appeal for sympathetic ministrations. An additional adaptive value is added in the good 'hurt cry' which a small boy works up in order to have his bullying elder brother punished. Even when fully grown the 'hurt feeling' retains for us the significance of a desire both for sympathy and for the punishment of the offender by having his injustices recognized by others.

Behavior of this sort serves the same purpose for the acquisition of objects or ends as the gesture of head-shaking serves in their rejection. The mode in all cases is imperative, and the effect is the securing of some infantile form of adaptation through the control of others. Laryngeal expression may be regarded as a kind of vocal gesture of infancy.

The Development of Language: Stage 1. — Random Articulation with Fixation of Circular Responses. The marvelously intricate and versatile speech mechanism described earlier in this chapter is at birth, like other motor mechanisms, simply a crude possibility. Further growth of the nerves and muscles must combine with *practice* to produce a repertory of sounds adequate for language. With such development as a basis the social environment furnishes the stimuli necessary for the acquisition of perfected speech habits. The earliest used consonants, which, according to Miss Blanton, occur during the first month of life, are chiefly nasals and gutturals, such as *m*, *n*, *ng*, *g*, and *k* (also *h*, *w*, and *y*). These represent easy mouth positions adopted probably as random movements. They are articulated with various long and broad vowel sounds, and with some diphthongs (double vowels), as in "*gow*" (writer's son at two months).

Overlapping with the period of laryngeal expression and finally succeeding it there appears the stage of random articulation, the babbling and cooing of the child during its second and third half years of life. In this period the early consonants are repeated with better control and supplemented by new ones. The dental and

labial explosives, *p*, *b*, *t*, and *d*, are soon acquired. The fricatives *s*, *f*, *v*, and *th* are more intricate and come later. *L*, which requires inversion of the tip of the tongue, may require three years to perfect. *R* also is difficult as an initial sound. Examples of early mispronunciations are "whing" (sing), "yight" (light), etc. Double consonants cause much difficulty, the second consonant generally being slighted; for example, "p'ease" (please).

With random articulation we enter upon a new phase contrasting somewhat with that of pure laryngeal utterance. The latter is imperative in mode. It arises with some strong, unpleasant emotion due to thwarting or discomfort; and it rapidly assumes the function of social control. 'Baby talk' on the other hand is spontaneous and indicative of a pleasant mood. It is a form of play, a part of the diffuse outflow of energy, rather than an effort at the control of others. If stronger emotions enter the field, bringing in the functions of the sympathetic nervous system, the pleasant prattle at once gives place to the inarticulate cries of the earlier period.[1]

Too much attention has been paid to the acquisition of vocabularies, and too little to the study of the pre-verbal stage of random articulation in infants. This stage not only affords the material for language but gives the practice necessary for the control through the ear of the muscles of speech. The chief significance of the vocal play of babies seems to be in establishing circular reflexes between the sound of the syllable and the response of speaking it.[2] Let us suppose, for example, that the baby utters the syllable *da*. By so doing he stimulates himself through two channels. He receives certain kinæsthetic sensations from the movement of the vocal organs, and certain auditory sensations from the sound which he produced. It is with the auditory stimulation that we shall be chiefly concerned. Returning to the brain centers these afferent impulses are, or tend to be, redischarged through the same motor pathways as those used in speaking the syllable itself. There are two possible methods of explaining this. We may suppose that the synapses connecting the afferent impulse with the motor outlet

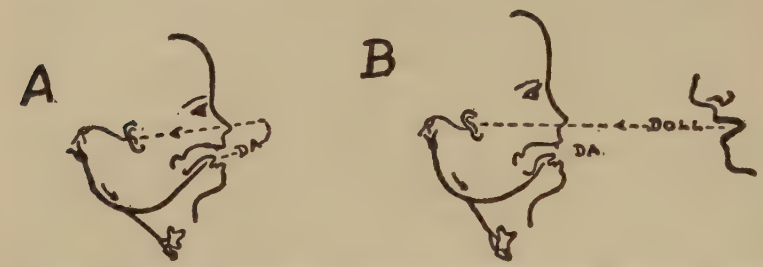
[1] Cf. the theory of antagonistic emotions explained in Chapter IV.
[2] The general mechanism of circular reflexes was described on p. 39.

of speaking *da*, having been recently used, are in a state of relatively lowered resistance, and are therefore readily put into operation again. Or we may infer that, in some cases at least, the return stimulations are received while the speaking response is still going on (as in a prolonged vowel sound), and the motor synaptic resistances for *da* are completely overcome because discharge through those synapses is actually taking place. We have here the exact situation for the formation of a *conditioned response*. The response *da* becomes circularly conditioned by the sound *da;* and this sound when later heard will tend of itself to evoke the response of speaking it. This latter explanation is probably the true one.[1] While the babe is practicing the syllabic elements of his future vocabulary he is therefore also fixating ear-vocal reflexes through which a spoken sound may directly evoke its enunciation. Articulation has now advanced to a stage where it is capable of being controlled through the auditory receptor. The process just described is illustrated diagrammatically in Figure 19, A.

Stage 2. — Evoking of the Articulate Elements by the Speech of Others (so-called 'Imitation'). At this point the social influence enters the process of language development. If the ear-vocal reflexes have been sufficiently established for the sound of a word to call forth the response of articulating it, it is no longer necessary that the child himself should speak the stimulating word. It may be spoken by another. The effect will then be that of the child repeating the sounds which he hears others utter. This stage is suggested in Figure 19, B. It is, of course, assumed that only such speech responses as have been acquired through growth and practice will be evoked in this manner. The child does not imitate or duplicate the speech of his elders. There is evoked simply the nearest similar ear-vocal reflex which, with his present limitations of pronouncing, he has been able to fixate. The word "doll," spoken by

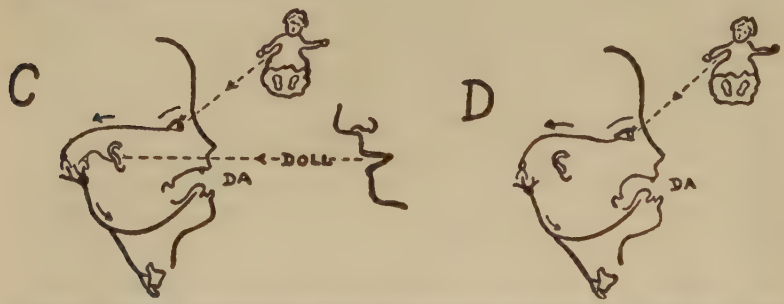
[1] Direct proof of this process is, of course, difficult to obtain. There are, however, a number of exact analogies, of which the micturition reflex is perhaps the most convincing. When the bladder is partially filled, the mere *sound* of running water is a sufficient stimulus to cause either an increase in bladder tonus (desire to urinate), or the act of voiding itself. Here, as in the vocal reflexes, the sound produced by the act performed in the past by the individual himself has acquired, by conditioning, a stimulus value for evoking the act itself. Feeling impelled to cough when we hear others cough is a similar example.

the parent, would probably be repeated *da* (*a* as in f*a*ther). In this manner whole phrases far beyond the learner's comprehension may be reiterated rote fashion with as fair accuracy as the speech habits already acquired permit. It is essentially a parrot stage. In



A, Stage 1. — Random articulation of syllables with fixation of circular responses. Chance articulation of the syllable *da* causes the baby to hear himself say it. The auditory impulse is conveyed to the brain centers where it discharges into the efferent neurons to muscle groups used in pronouncing the same syllable. An ear-vocal habit for *da* is thus established.

B, Stage 2. — Evoking of the same articulate elements by the speech sounds of others. An adult speaking the word "doll," which is closely similar to *da*, causes the auditory excitation again to discharge into the response *da*.



C and D, Stage 3. — Conditioning of the articulate elements (evoked by others) by objects. In *C* the process shown in *B* is repeated. A doll shown at the same time stimulates the baby's eye, and forms a visual connection with the motor neurons being used in pronouncing the syllable. There is thus established a conditioned response between the sight of the doll and the speaking of *da*. The sight of the doll alone (*D*) is now sufficient to evoke its name (*da* being as close as the baby can come to the pronunciation of "doll").

FIGURE 19. THE DEVELOPMENT OF LANGUAGE HABITS IN THE INFANT

popular parlance it is known as 'learning by imitation.' The term 'imitation' is however both inexact and misleading, for it suggests that the process is one of learning the speech reactions of others by voluntarily copying them; whereas it is really the touching off of

previously acquired speech habits by their conditioning auditory stimuli.[1]

Discussion of the Theory involved in Stages 1 and 2. The reader should bear in mind that the process thus far described is largely hypothetical. Precise physiological data are wanting; but in their absence we may review certain lines of evidence in support of the hypothesis.

(1) If vocal responses are circularly fixated, with the sound of speaking them serving as stimulus, we should expect that reiteration of the same syllable over and over would be a necessary result. The baby would learn to mimic himself as a prerequisite for repeating sounds made by others. The facts support this supposition. Reduplication of syllables (*da-da-da*, etc.) in a tireless manner is a common phenomenon of baby talk. Later many objects are named with doubling of syllables (for example, *wah-wah* for water), and longer phrases are reiterated as a kind of play.

(2) Only sounds which have been already pronounced in random articulation can be evoked by the speech sounds of others. That is, only those sounds can be evoked which have had a chance to become circularly fixated as ear-vocal reflexes. The spoken word "pencil" was repeated by the writer's son as *punka* (*c* and *l* sounds not yet acquired). The phrase "What is that?" involving difficult consonants, was reproduced as *ŭh ĭ ă*. The words "down," "doll," and "clock," when spoken to him, were all repeated as *da*. *Ba*, similarly, was his reproduction of "box," "bath," "bottle," "block," and "bye." [2]

(3) There exist in the central nervous system mechanisms adequate for the circular fixation of vocal habits. Leaving out of account the cortex, relatively undeveloped in infancy, there are adequate connections between the auditory nuclei of the brain stem and motor fibers controlling the organs of speech. Neither high intelligence nor conscious imitation are necessary for the use of this apparatus. The ear-vocal connection is direct and im-

[1] Although the theory thus far discussed was developed independently by the writer, he does not claim to be the first one to have advanced it. A concise statement of the principles involved may be found in Smith and Guthrie: *General Psychology in Terms of Behavior*, p. 132.

[2] Cf. E. L. Thorndike: *Educational Psychology, Briefer Course*, p. 43.

mediate. The evidence for this is at hand in cases of *echolalia* in idiots and aphasic patients.[1] These 'human parrots' accurately reiterate whole phrases spoken in their hearing without the slightest comprehension of their meaning. We are probably dealing here with sub-cortical mechanisms representing early formed and circularly fixed responses comparable to those of the baby.

(4) It is well known that congenital or early deafness is usually accompanied by mutism. Deaf-mutes are able to articulate in the manner of the random infantile period (baby talk); but they cannot, without special methods, learn the use of spoken language. Since the ear-vocal reflexes were not and cannot be acquired, some other form, such as eye-vocal reflexes, must be substituted if the knack of speaking words is to be imparted to them. The lack of the usual, early formed, circular vocal reactions is responsible for their mutism.

Without pursuing this question further we may tentatively accept the foregoing explanation of the so-called 'imitative stage' of language development.[2] Word habits have been formed which are capable of being put into effect by the sound of the same words spoken within hearing. The next step is to convert these parrot-like reactions into true language. This step like the preceding is achieved through social agencies.

Stage 3. — Conditioning of the Articulate Elements (evoked by others) by Objects and Situations. As soon as the stage is reached in which the parent can evoke repetitions of words from the infant at will, the process of teaching him to name objects begins. It does not suffice to say "doll" and hear the child repeat *da*. The doll

[1] L. S. Hollingworth: "Echolalia in Idiots," *Journal of Educational Psychology*, 1917, VIII, 212–19.

[2] A rival theory asserts that every vocal response pattern is connected *innately* with the sensory pattern produced by the sound of the word in question. Special instinctive mechanisms of imitation supply the ear-vocal connections which we have assumed to be developed through a conditioned circular response within the experience of the individual. The four points in the discussion above might all be construed to fit this theory. (Cf. Professor Hollingworth's article, *loc. cit.*, in regard to echolalia.) It would be necessary, however, to meet the criticisms in regard to maturation theories and inheritance of "perceptual dispositions" raised in Chapter III. The maturation theory is particularly awkward, compared with the circular reflex theory, in connection with the second point of the discussion. Instinctive imitation is at best a speculative hypothesis, while cases of circularly fixated, ear-motor reflexes are clearly established (see footnote to p. 183).

itself is held up for inspection while the learner repeats the word pronounced by the parent or nurse. A conditioned response is thus formed; the afferent visual impulse from the doll discharges its energy through the motor pathways of the speech pattern of pronouncing the word. The object itself thus becomes a stimulus adequate for evoking the response of speaking its name. Figure 19, C and D, illustrate schematically this conditioning process. Stages two and three are practically synchronous in the actual development of the child. We have separated them in the description only for the sake of clearness.

Progress from this point is rapid. A child may learn in this manner to speak the approximate names of several hundred objects while he is still laboring over the exact pronunciation of difficult consonants. The naming, or vocabulary-acquiring, process begins early in the second year and increases by ever-lengthening strides up to six years, at which age the average child has a vocabulary of about three thousand words.

Our explanation thus far has involved only the control of the speech reactions of the child by the adult. Social control, however, soon operates in the reverse direction. The child learns to use his naming habits as *demanding* habits. Suppose he sees a new and interesting doll out of reach on a shelf. Manipulative tendencies cause him to reach for it. Failing in this, the usual law of trial and error brings into play all possible movements. One of the readiest and easiest of these movements is the pronunciation of the word "doll" — a reaction which is moreover elicited by its recent association (conditioning) with the sight of an object of that general sort. The word is therefore spoken, and the pleased parent presents the doll as a reward. The manipulative drive now proceeds unhampered, and the arcs involved in this solution of the problem are fixated for future use. By simple vocal expression the child thus learns to control others. He increases vicariously his own stature, his power, and his sagacity by enlisting these attributes of adults in the service of his needs. Little wonder that his linguistic progress is rapid!

The naming reaction can be conditioned not only by the sight of an object but by other stimuli inherent in the *general situation.*

The word "doll" may have been evoked at a time when the child was handling the toy, 'talking' to it, or even running to get it. The proprioceptive stimulations arising from these acts therefore become adequate conditioning stimuli for producing the response of speaking the word. In all relations in which the doll itself was formerly experienced the word "doll" may now be called up in consciousness and evoked as an audible or a 'thought' response. At any future time therefore when the child may recall or have the tendency to manipulate such an object through habit, he will be likely to say "doll." The attendant again produces the object; and the arcs involved in this solution are fixated as before. The learner has now reached the advanced stage of demanding objects *desired but not seen*. Verbs, adverbs, and particles, such as "give," "down," "again," "move," and "no," are acquired and used in the same fashion. Having been learned through social agents in connection with attitudes, postures, and situations, they are now used to control these agents with respect to the situations they represent.

In the learning of language then, as in the stages of laryngeal and gestural expression, we find that social control is a cogent factor. With increasing development, however, other considerations enter. In addition to naming and demanding objects the child begins to talk *about* them. He discourses to his toys and about them. He verbally reviews bits of the day's experience as he lies in his crib in the evening, and in so doing substitutes word responses for the overt movements he originally employed in living them. In other words, language becomes for him a vehicle of *thought*.

Development of Response to Language. A few words may be added concerning the understanding of language by the infant, a function which precedes its actual use by some weeks or months. Speech sounds of others stimulate the child in many ways beside the eliciting of ear-vocal reflexes. They control his behavior in consoling him, diverting his attention, and offering signs by which he knows that he is to be tended in various ways. Language serves to condition the prepotent activities of the baby in the same way that the incidental growls or sex sounds condition the withdrawing or approaching responses of the lower animals. Experiments show

that dogs respond very little to words as articulated symbols, but chiefly to the pitch, intensity, and quality of the voice. The earliest effect of vocal stimuli upon the baby is through these same laryngeal components. An infant will cry at a scolding tone of the parent long before the words themselves are understood. By the end of the first year the response to commands, or to the direction of attention, that is, to some part of the child's body, indicate that he is beginning to understand the meaning of articulate word symbols.[1]

The final achievement of linguistic development is the response to language by the use of language, as in answering a question. This occurs late, usually after a fair mastery of speech has been obtained. Aside from the intellectual difficulty involved, there appears to be a kind of inertia: the child is loath to quit the placid, irresponsible haven of ear-vocal reflexes for the uncharted sea of interrogation.

Gesture and Vocal Expression in Human Development

Infantile and Primitive Language. Although the old notion that the child in his development recapitulates the stages in the evolution of mankind is becoming obsolete, we may still profitably bear in mind some of the facts of child language in seeking to understand its development in the race. In certain aspects the same conditions and explanatory principles apply to each. (1) Neither the child nor aboriginal man was innately endowed with speech. The drives, moreover, and laws of learning by which it had to be acquired are the same for both. (2) Pre-linguistic man, as well as the modern baby, probably possessed as material for language development a set of random laryngeal and articulate utterances. The main differences between the two situations are (1) that the child learns the speech reactions already established in the vocabulary of his elders, while the primitive man had to evolve a language of his own; and (2) that in the former case the language is mastered in

[1] Romanes states the case as follows: "While the understanding of certain tones of the human voice extends at least through the entire vertebrated series, and occurs in infants only a few weeks old; the understanding of words without the assistance of tones appears to occur only in a few of the higher mammalia, and first dawns in the growing child during the second year." (*Mental Evolution in Man*, p. 124.)

the first few years of an individual's life, whereas in the latter whole tribes were busy for many generations contributing word symbols, and modifying and transmitting linguistic art, before an adequate language was achieved. These statements will be developed in the sections following.

Theories of the Origin of Language. Gesture. Speculation on the roots of language has yielded a considerable crop of theories. Three of the most significant are the gesture theory, the interjectional theory, and the onomatopoetic theory. The gesture theory of Wundt traces the origin of language to gesticulation. Stress is laid upon the precedence of gesture to speech in the infant, and upon the fact that gesture is an effective and spontaneously adopted means of communication among both primitive and civilized when the speakers have no language in common. Anthropologists report detailed, narrative conversations carried on by pantomime between Indians of distant tribes.[1] The American soldier in France had little difficulty in making his wants known through gesture and grimace. Deaf-mutes and aphasic patients are very skilled in this form of communication. Even idiots can be taught to obey commands given in gesture which would be meaningless in verbal form.

Gestures are of three kinds, emotional, demonstrative, and graphic. Bodily movements form a natural part of the primitive emotional reactions. The fist is clenched in anger. The hand is waved to one side and the foot stamped in impatience. Pointing the finger with the hand clenched and palm to the inside is a gesture of threat or accusation. Pointing with the palm down is merely for directing attention. Some of these gestures seem as immediate and innate as facial expressions. Their significance as stimuli is even greater: they are rarely misunderstood. Most emotional gestures belong to the 'halfway stage' of communication; that is, they are of more significance for the one who sees them than for the one who makes them. They afford the former a clue for adapting himself to the mental condition of the latter. Among the lower animals, who possess no language proper, they become important means

[1] For a good account of gesture language see Romanes: *Mental Evolution in Man*, ch. 6.

for controlling other creatures. Demonstrative gestures consist merely of pointing to the objects one desires to call to attention, allowing the situation to make clear any control which the 'pointer' desires to exercise in regard to them. The vocabulary in this case is, of course, limited to the range of objects within sight. This defect is remedied by the use of descriptive or graphic gestures. One may, for example, represent a house by movements of the hands suggestive of a sloping roof and walls; or he may denote a certain person or animal by mimicking his essential characteristics. Action may be described in a similar manner. A wide range of conversation is possible by the use of graphic gesticulation.[1]

Graphic Gesture in Relation to Infantile and Primitive Language. In several ways graphic gesture resembles the language of the infant and of primitive man. First, it does not lend itself to abstractions. Since all the movements are descriptive of specific things none of them qualifies as a conveyer of abstract meaning. The phrase "all men are mortal" would be difficult to render either in gesture language, or in infant or primitive speech. A word such as "make" can be expressed only by movements suggesting the making of some particular object. Concrete familiar terms are used in lieu of class concepts for new generalizations. Thus a savage, at first sight of a slate pencil, called it a "stone scratch something." The writer's small son, on being initiated into the delights of whipped cream, shouted "more piece o' milk!" So particularistic are primitive languages that some of them have no general pronouns indicating the person in all his relations. Separate words must be used to denote "he sitting," "he running," "he absent," and the like. The descriptive resemblance to graphic gesture is thus clearly shown.

Secondly, the concreteness of these early languages is shown in the flow or succession of images employed. The significance of Santa Claus would be explained by the two-year-old by such impressions as, "Santa drop down chimney — snow on Santa Claus — Santa put toys in stocking — Santa go away — come again next

[1] The natural readiness of graphic gesture in daily life is notorious: instance the riotous mimicry of children, or the old 'sell' of the practical joker who asks his fellow man to tell him what an *accordion* is, and then pokes fun at the naïve descriptive gestures made by the hands of the victim.

Christmas." In a similar manner the Indian might relate the coming of the white man. Everything is impression; interpretation, feelings, motives, cause and effect must all be supplied from the context. The order of words in gestures indicates the same impressionistic treatment. The sentence "The angry teacher strikes the child" would be rendered "Teacher, angry — child, strikes." Infantile word order is somewhat similar. The elemental languages thus resemble gestures in lying closer to the level of immediate sensory experience than do the abstract expressions of civilized adults.

The third resemblance is in defect of syntax. In gesture, and in much of infant language, the tense must be inferred from the situation. So also with mood: a look of interrogation converts the indicative gesture into a question. A determined or angry countenance gives the mimetic gesture the force of a command. Similarly with infant speech, the single word "doll" may denote tenderness for the object, meditation about it, or an angry desire to have it from the shelf, according to the tone with which it is pronounced and the accompanying gestures. Single words used by children to convey whole commands or other meanings are called 'sentence words.' There is an analogy in primitive speech, though not an exact analogy, in the holophrase, a single word denoting a complete action or situation. Thus in Aztecan the word *onictemacac* means "I have given something to somebody." In dispensing with parts of speech, and in presenting a total situation in one symbol, the holophrase might be called a 'word gesture.'

To summarize: we have seen that gesture exists in both the infant and the aboriginal adult as an elementary means of communication, and that genetically in both child and race vocal language is peculiarly gestural in its structure. Wundt's theory is further supported by the fact that many primitive tribes combine grimace and gesticulation as an integral part of spoken discourse. It is said that in some cases tribesmen can hardly converse with one another in the dark. Although the gesture theory is thus supported by ethnological and genetic observations, it must, however, be remembered that gestures are visual stimuli, while words are auditory. The similarities between gesture and early language bespeak

the primitive state of the sign-making function underlying both; but they do not explain the transition from manual signification to vocal. Language possesses enormous advantages over gestural expression, advantages which made it certain that in the course of evolution it would replace the latter as an entirely new variety of communication.

The Interjectional and Onomatopoetic Theories. The interjectional theory bases the origin of language upon primitive ejaculations of an emotional sort, which were probably common among aboriginal men as among animals. In so far as emotional growls and cries are products of the larynx there is probably a sound basis for this theory. Tonal differentiations play a large part in primitive tongues, in many cases changes of pitch and quality giving a modified or entirely different meaning to a word whose form otherwise remains the same. Civilized languages also show many traces of an 'interjectional stage.' Changes of intonation are used in fairy stories; the voices of the father, mother, and baby bears, for example, being portrayed by a kind of 'vocal gesture.' "Yes," spoken with a rising inflection, and in widely different languages, asks a question; with a falling tone it denotes certainty. "Ah!" may be so intoned as to convey a feeling of pain, pleasure, surprise, admiration, or reproof. The limitation of the interjectional theory is that it can carry us no further than the laryngeal stage. It offers no foundation for articulate speech.

The onomatopoetic theory ascribes aboriginal speech to the imitation by man of natural sounds, such as the roar of the wind or the cries of animals. Attention is called to the rich variety of onomatopoetic words in the vocabularies of primitive and infantile language. Many of these are probably, however, of recent origin. At best this theory merely states a source for some linguistic elements; it does not explain *how* the elements were acquired. In answer to this last question the following wholly tentative theory is advanced.

A Social Behavior Account of the Origin of Language. There is a fair agreement among philologists that a laryngeal, or glottal, period comparable to the cries of animals and babies existed for a long time in the history of man before the rise of articulate speech.

We have indicated in Chapter VII how the prepotent behavior of animals is conditioned by the cries of anger, fear, and sex desire of their fellows, and how the makers of these sounds thus learn to use them for controlling the responses of other animals. It is fully conceivable that a similar development occurred in the human race, and that self-adaptation and control of others by inarticulate laryngeal sounds evolved as the earliest language of mankind. Social control, heretofore neglected by philologists, must therefore be recognized as a potent factor in the origin of language.

The real problem, however, arises in explaining the transition from this narrow emotional repertory of the glottis to the enormous array of articulated consonantal and vowel groupings which constitute the most primitive of tongues. Only through the use of *words* can language achieve its true rôle as a symbolization of objects. We may begin with the very probable assumption that aboriginal man, like the infant, was possessed of some sort of articulating mechanism, and that he was capable of producing random articulated syllables. The first two stages of our theory of infant language would then apply. That is, he would fixate in himself certain circular reflexes of the ear-vocal sort, and these responses would therefore be capable of being evoked by hearing the same sounds spoken by another. Evidence for the existence of the circular process is seen in the extensive reduplication of syllables which is even more characteristic of words in primitive than in infantile vocabularies.

With the third stage, however, we seem to reach an *impasse*. The conditioning of syllable responses by the sight of objects, as described in the naming habits of the child, presupposes a social agent who *knows* the names of objects and can teach them in this way to the learner. There is of course no one who knows the language in question prior to its coming into existence. Our answer to the dilemma is that the first word response occurred and was fixated by a chance articulation spoken by an individual in association with some object or situation, and in the sight and hearing of another individual. The ear-vocal reflex of the spoken syllable would be then conditioned in the speaker by the sight of the object; and, what is equally important, it would be evoked in another

individual and similarly conditioned. Here then we have the basis for the use of the same word-sign or name by two or more persons, the essence, in other words, of language itself. Success in communicating and controlling one's fellows with reference to the object would serve to fixate this conditioned ear-vocal reflex as a permanent habit. With the advancement of human intelligence mankind probably learned to profit by this accidental discovery and, grasping the significance of the principle involved, began to apply it, at first unconsciously and then more or less deliberately, in the coining and adoption of new word-signs. Like roast pigs in Lamb's Essay words were eventually found possible of achievement by design as well as by accident. Here no doubt entered the influence of appropriateness in the social fixation of object-names. Onomatopes were naturally chosen in great number because they seemed to fit their objects so well; and in a sense the objects denoted taught man their own names through the noises they produced. If the foregoing theory is correct, social stimulation and response lie at the very root of language, and deserve far more attention than they have received in philological discussions.[1]

Written Language. By the aid of writing social stimulation is extended through vast reaches of time and space. Published orders from the army Chief-of-staff may direct the movements of soldiers in the opposite hemisphere. Mosaic law still has its potency in controlling human thought and action. Though subject to modification of meaning through interpolation and through loss of the effects of the intonation and personality of the writer, every bit of language read represents an influence exerted upon one individual by the linguistic mechanisms of another.

In both the child and the race written language is acquired long after the spoken form, which it merely symbolizes. Picture-writing was the earliest form of chirography. Writing, like gesture and speech, was originally graphic in character. The pictures were

[1] The theory, though speculative, is not without empirical support. There are many authentic cases of originating word-names, and even languages, among groups of very young children. A pair of identical twins, who through similarities of structure and habit and through constant and affectionate comradeship were predisposed toward identical ear-vocal reflexes, evolved between them a fairly complete language understood only by themselves. For details of this interesting case see Romanes: *Mental Evolution in Man*, pp. 138–44.

gradually reduced to bare conventional symbols of the objects they formerly depicted (an example is the modern Chinese alphabet). Inasmuch as articulated auditory stimuli had proved more versatile than the visual language of gesture, written language advanced by providing visual symbols for the articulated sounds. The first stage of phonetic writing was the rebus. An impression given visually was interpreted by the reader in an auditory fashion, and a different meaning assigned. Thus the word "male" might be represented by a picture of a coat of mail. In this way abstract words, impossible to picturize directly, could be visually represented. The final stage of writing, and one of the greatest social achievements of all time, was the invention of the Phœnician alphabet, in which each language sound has its arbitrary symbol.

Conclusion — The Social Basis and Value of Language

Language, the major form of social stimulation, has evolved through that very type of situation in which it exercises its present social function, namely, the stimulation of one person by the vocal reactions of another. Let us briefly sum up the process. It began both in the infant child and the infant man by gestures. These comprised natural emotional expressions, pointing, and descriptive movements. Vocal expression meanwhile came into play. Alike in animals, children, and the race it first took the form of variable cries produced chiefly by the vocal cords. By learning the significance of gestures and tonal interjections animals, children, and men learned to adapt themselves — that is, to behave appropriately — toward their fellows. On the other hand in using these stimuli they soon learned that the behavior of others could be controlled for their own interests. Incidental vocal acts were then deliberately performed as coercive signs.

A more refined form of control through the use of sounds as symbols was the next step. A set of word symbols far more elaborate than the range of laryngeal and gestural possibilities was needed. Consonants articulated by the tongue and other mouth parts with the glottal vowel sounds fulfilled this need. Beginning with random articulation, according to the theory advanced, control of the elements by the ear was gained through circular self-

stimulation. The speech elements were then evoked by others and attached as conditioned responses to afferent impulses from objects and situations. In the child these conditioned word habits are the legacy of social inheritance. In the history of language they probably arose fortuitously by chance association, and were developed by human invention. Brought into the service of the prepotent needs, the use of words rapidly extended from mere nomenclature to demanding and controlling others with respect to objects and situations denoted.

Every human advance, whether it be by learning, problem-solving, or invention, must be based ultimately upon some prepotent need (see Chapter III). The control of others in the service of such needs is clearly the drive behind the original acquisition of language. This, rather than the desire to communicate, 'instinct to express,' or other alleged social instinct, has been the guiding principle. To this drive a somewhat later but important allied drive was added, namely, the effort to control the *non-social* environment. Primitive man did not, of course, speak words to animals, trees, and metals; but he spoke words to himself *about* them. He used implicitly pronounced language symbols in representing their properties and relations, and in predicting certain things concerning them. In other words, language helped him, as it helps the infant, to learn to think, and to develop a practical and a scientific culture. This use of language, however, was a later development. In the very origin of speech the leading drive was probably the immediate incentive of social control.

Turning from the social foundations of vocal expression to its current value as a social stimulus, we enter upon a field covering the major segment of human life. Making and responding to language stimuli, oral and written, has become deeply rooted in our most vital interests. We can scarcely conceive what human culture, or even human nature itself, would be without this function. The institutions upon which the social order rests are really systems of traditional and recorded language. Education is the socialization and training of the individual through language symbols. The edicts of government and public opinion, in rumor or print, direct his thought and conduct through the same medium.

These forms of control are 'institutionalized'; through them, by means of language, each individual is trained and controlled for the good of all.

In the more personal relations language retains, in a subtle form, its pristine function of control. In conversations we strive to impress upon others our experiences, attitudes, and feelings. In letters we do the same, and also politely request our correspondents to perform services for which we "feel ourselves deeply indebted." The novelist and dramatist control the flow of emotion and imagery in their auditors to suit their own purposes. Even the professor in delivering a scientific lecture controls the thought processes of his students; for communication of ideas is a form of social control.

In most of these instances, however, the community of interest and thought and the pleasure of contact and discussion are so absorbing that the control factor is obscured. Modern man has become socialized both in the character of his demands upon others and in his willingness to meet reasonable demands made upon him. Give and take has become a pleasure in his social life. Hence actual control through language stimuli may be readily brought about without his being aware that he is either employing or submitting to it. Language, therefore, is no longer regarded as a coercion, but as a form of intercourse through which human nature finds its fullest expression.

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CHAPTER IX

SOCIAL STIMULATION — FACIAL AND BODILY EXPRESSION

Introductory Statement. "Say to a dog, to a child who does not yet know how to speak, or to a foreigner . . . the word *brigand*, at the same time smiling benevolently or making affectionate gestures; these three beings, very different in their natures, . . . will reply to you with an expression of affection. Say to them, on the contrary, the word *dearest* with an expression of hatred or a threatening gesture. You will see them shrink with terror, attempt to escape, or utter complaints." By this quaint truism Paolo Mantegazza indicates "the boundary which separates conventional language from the simple and elementary language of physical expression." We have already given some attention to the primitive language of gesture. In this chapter we shall consider further the emotional and other expressive movements of the face and body, and estimate their significance for social stimulation. Our starting-point is again the physiological mechanism.

The Facial Muscles and their Expressive Function. The facial muscles are of the striped, or voluntary, variety. They are generally flat in shape, and most of them run from a fixed point on bony structure, called the 'origin,' to some mobile mass of skin or muscle, called the 'insertion.' Thus in contracting (shortening) the muscle pulls the region of insertion toward the point of origin. The facial muscles comprise about twenty-four pairs, and may be grouped into seven regional classes — the facial divisions being as follows:

Brows and Forehead
Eyes
Nose
Upper Lip
Lower Lip and Chin
Mouth-aperture
Lower Jaw

Figure 20 should be studied in connection with the following description. Each muscle will be readily identified from the name or abbreviation printed upon it. Most of these names express (in Latin) the function of the muscle.

FIGURE 20. THE MUSCLES OF FACIAL EXPRESSION
(From Gray's *Anatomy*, by permission of the publishers, Messrs. Lea and Febiger, Philadelphia.)

The movements of the brows are effected by two muscles. One of these is the long *occipito-frontalis*. The contraction of its frontal portion raises the eyebrows and draws the scalp forward producing horizontal wrinkles in the forehead, as in fright. This muscle has an antagonist in the *corrugator supercilii* (origin, skull at inner end of brow; insertion, skin above the eye). This is the frowning muscle: it draws the brows inward and downward, producing vertical wrinkles between them.

The eye is closed by the contraction of the circular fibers of the sphincter muscle, *orbicularis palpebrarum*. Its inner portion produces the quick protective wink of the lids; the surrounding part closes the eye forcibly making wrinkles, or 'crow's-feet' at its outer corner. The *levator palpe-*

bræ superioris (origin, roof of eye cavity; insertion, upper lid) is not shown in the drawing. It raises the lid in antagonism to the orbicularis muscle. The glance or movement of the eyeball itself has expressive significance. Six muscles within the eye socket, arranged in pairs, give the eyeball motility in all directions.

The brow and eyes are chiefly expressive of fear and anger; the nose, on the other hand, is the organ of disgust. The *pyramidalis nasi* (origin, bridge of nose; insertion, skin between eyebrows) draws down the inner angle of the brows and produces transverse wrinkles over the root of the nose. The *levator labii superioris alaequæ nasi* (origin, high on upper jaw bone; insertion, upper lip and ala,[1] or wing, of nose) shortens the nose and widens the nostril as in contempt. Two other muscles aid in distending the nostrils, the *dilatator naris, posterior* and *anterior* (origin, upper jaw bone and nose cartilage respectively; both are inserted in the ala). They dilate the nostrils in labored breathing and anger. The dilatators are opposed by the *depressor alæ nasi* (origin, low in upper jaw bone; insertion. septum and ala) which draws downward and narrows the nose. The lower part of the nose is flattened by the *compressor nasi* (origin, upper jaw bone; insertion, skin over front of nose).

The upper lip is moved by four muscles, all originating in the upper jaw or cheek bone. They are the *levator labii superioris*, the *zygomaticus minor*, the *zygomaticus major*, and the *levator anguli oris*. They are inserted along the upper lip. The first of these raises and slightly protrudes the lip. The levator anguli oris and the zygomaticus major raise the corner of the mouth and draw it inward, or backward and upward, as in smiling. The zygomaticus minor draws the upper lip (not the corner of the mouth) backward, upward, and outward, producing an effect of sadness.

The lower lip has two depressors, the *depressor labii inferioris* and the *depressor anguli oris* (origin of both, lower jaw bone; insertion, respectively lower lip and corner of mouth). The former draws the lower lip downward and outward ironically, while the latter depresses the corners of the mouth in opposition to the levator anguli oris. The *levator menti* (origin, lower jaw bone; insertion, *descending* to integument of chin) by contracting forces the lower lip upward and protrudes it disdainfully, and also wrinkles the surface of the chin.

Several important muscles close or modify the aperture of the mouth as a whole. The *orbicularis oris*, a circular band surrounding the mouth, draws the lips together in antagonism to the lip muscles. Its deeper portion closes and retracts the lips (determinedly) against the teeth. The superficial layer closes and protrudes them, as in pouting. The *buccinator* muscle (origin, both jaw bones; insertion, corner of mouth) compresses the cheeks as in blowing a trumpet. The *risorius*, a muscle similarly placed, retracts the corner of the mouth as in unpleasant sardonic laughter.

[1] The alæ are the rounded prominences at the sides of the lower part of the nostrils.

Two muscles significant for raising the lower jaw are the *masseter* and the *temporal*[1] (origin cheek and temporal bones, respectively; insertion, lower jaw). While they determine the extent of mouth opening in expression, their chief function is for mastication. The large neck muscles controlling the head movements are also suggested in Figure 20.

The facial muscles, like the muscles of the larynx, work in combinations. They produce expressive patterns denoting simple and complex emotions. The muscles of expression are voluntary, that is, they are under the control of the cortex. It is likely, however, that the nuclei of the seventh (facial) nerve, lying in the medulla, provide subcortical reflexes governing facial expression. Autonomic impulses may play a part, as suggested by the involuntary play of the features in emotion. Marked differences exist in individuals, in ages (infancy, maturity), and in races with respect to the development and control of the various expressive muscles.

The Language of the Face. Beneath all the wealth and variety of facial expression in emotions there may be recognized two fundamental types: the pleasant and the unpleasant. It will be recalled that in Chapter IV a theory of emotion was developed upon the antagonism of these two elementary affective states. This theory is further supported by facial expression in the emotions. The basic pleasant expression consists chiefly of the elevation of the corners of the mouth, the cheeks also being raised and the brow smooth. The unpleasant type has a depression of the corners of the mouth, a drawing down and elongation of the cheeks,[2] and a wrinkled brow. The two types are produced by antagonistic muscular patterns (for example, the antagonism between the

FIGURE 21. THE ELEMENTARY AFFECTIVE EXPRESSIONS
(Modified from Piderit's *Mimik und Physiognomik.*)

[1] Not shown in Figure 20.
[2] Except where complicated by such mimetic expressions as disgust.

levator and the *depressor anguli oris*) thus conforming to the visceral antagonism characteristic of the two states. A sketch is presented in Figure 21. The basic pleasantness pattern may be found in all pleasantly toned emotional expressions, such as smiling, laughing, joy, love, etc.; see Figure 22 B, *16*, *17*, *18*. The pattern of unpleasantness (wrinkled brow and inverted crescent mouth) is seen in pain, grief, anger, fear, scorn, disgust, hatred, and similar unpleasant emotions. It is clearly shown in Figure 22 A, *2*, *3*, *5*, *6*, *7*, *8*, *9*, and Figure 22 B, *12*, *14*.

In their various combinations and degrees the manifest expressions run well into the hundreds. We can, however, reduce this facial vocabulary to six elementary roots, represented by the following groups: pain-grief, surprise-fear, anger, disgust, pleasure, and various attitudes. The first four of these groups are unpleasantly toned; the sixth is neutral. Figures 22 A and 22 B should be examined while reading the following account.[1]

I. The Pain-Grief Group. In *bodily pain*, the extreme form of unpleasantness, there is a contraction of both sets of brow muscles producing both horizontal and vertical wrinkles in the forehead. Figure 22 A, *1*, although posed for despair, presents the main characteristics of pain.[2] The inner portions of the brows are raised more than the outer, resulting in the oblique eyebrows (sloping outward and downward) invariably seen in painful feelings. Attention being directed inward rather than outward the eyes tend to close. The drooping lids clearly distinguish this expression from intense fear (*6*).[3] The mouth in intense states is somewhat open and drawn to one side (groaning), producing a deep line between the angle of the nose and the corner of the mouth (naso-labial furrow). Judging from facial expression 'bodily' pain is also 'mental' pain; at least the unpleasant affective reaction common

[1] The pictures have been selected from among 680 modified photographs of a German actor, contained in Heinrich Rudolph's *Der Ausdruck des Menschen* (Atlas). They are reprinted by special arrangement.

[2] The student is advised to prepare a piece of pliable cardboard, about ten inches square, with a rectangular hole in the center the size of one of the small pictures. By placing the opening over each picture examined the expression will be seen with maximum effect.

[3] Study the upper and lower portions of the face separately, covering the unattended portion with a card.

FIGURE 22 A. VARIETIES OF FACIAL EXPRESSION

1. Despair
2. Sadness
3. Grief
4. Amazement
5. Disillusionment
6. Horror
7. Hate with Distrust
8. Rage
9. Rage with Fear

(From H. Rudolph's *Der Ausdruck des Menschen.*)

FIGURE 22 B. VARIETIES OF FACIAL EXPRESSION (*continued*)

10. Incredulous Doubt
11. Anxiety
12. Disgust
13. Sneering
14. Watchful Scorn
15. Laughing Scorn
16. Meaningful Smile
17. Entreating Smile
18. Laughing

to both produces remarkably similar effects in the face. Figure 22A, *1*, representing despair might readily pass for bodily pain.

Sorrow, a form of the primitive pain reaction, is shown in its mild form, *sadness*, in Figure 22 A, *2*. *Grief* is depicted in *3* of the same figure; the artist's title for this picture being "Sobbing, Suppressed Weeping." In addition to the oblique brows and inverted crescent mouth, the orbicular eye muscles are contracted (weeping), the upper lip depressed and drawn backward making naso-labial furrows, the lower lip trembles loosely, and the face and nose are elongated and narrowed.

II. The Surprise-Fear Group. When a person's sensorial attention is absorbed by some object before his gaze his eyes are usually opened wide and his brows lifted suggesting horizontal wrinkles in the forehead. Since being surprised or astonished always involves attention of this type, its expression becomes a component of the astonished face. *Amazement* is shown in Figure 22 A, *4*. The mouth drops open in a speechless manner, and the horizontal brow wrinkles are prominent. *Disconcertedness* or *dismay*, states in which we are not only surprised but baffled, combine with this expression an unpleasant one of mild anger, having vertical wrinkles added. *Disillusionment*, another interesting modification, is shown in Figure 22 A, *5*. Pain, for disillusionment is usually painful, is clearly added to the amazed look by the obliquity of the brows and facial elongation.

The unusual and astonishing is often the terrifying: hence we pass from amazement, through alarm and fear, to *horror*, the expression facing us in Figure 22 A, *6*. The brows strongly suggest the pain imminent from the terrifying object, which is fixated with wide open eyes. The mouth is opened wider and more rigidly set than in amazement or pain. The nostrils are dilated, and the head averted in a withdrawing reaction of flight. Milder forms of fear are not clearly distinguishable from amazement. Fear combines with pain in the expression of anxiety (Figure 22 B, *11*); the former component being shown in the brow and eyes, the latter in the opening of the mouth (cf. Figure 22 A, *1*).[1]

III. The Anger Group. In *anger*, a violent form of which

[1] See footnote to p. 95.

appears in Figure 22 A, *8*, the brows are knit together and drawn downward at their inner ends. Hence the brow wrinkles in this state are *vertical*. The obliquity of the eyebrows is opposite from that of the pain group, the brows sloping inward and downward. The eyes are opened wide to fixate the object of wrath. The lower lip is drawn tensely backward and downward exposing the lower teeth, while the jaw is protruded rigidly. There is a widening of the nostrils. *Annoyance* and *irritation* are similar but milder states shown chiefly in the brows. Abiding or repressed anger, commonly known as *hate*, is seen combined with *distrust* in Figure 22 A, *7*. The covert glance and averted head of distrust are not markedly distinct from the expression of hatred. A feeling of 'bitterness' is suggested in the lateral region between nose and mouth. The facies of rage and fear are effectively combined in Figure 22 A, *9*, the mouth expressing anger and the brows a combination of the two emotions.

IV. The Disgust Group. *Disgust* in its numerous varieties is a remarkably expressive reaction. Its simple form is shown in Figure 22 B, *12*. Its central indications are the drawing up and shortening of the nose, producing transverse wrinkles across its root, and the elevating of the sides of the alæ thus widening the bottoms of the nostrils. Depression of the angles of the mouth deepens the naso-labial furrow, and the cheeks as well as the nose are puckered so that the lower lids are raised and partially closed. Thus the eyes, if separately examined, have a laughing expression, which, however, is belied by vertical brow wrinkles suggesting displeasure from the disgusting object. The lower lip is raised and protruded suggesting *loathing* or mild *nausea*, an expression akin to incipient vomiting. *Contempt* is a mild and 'intellectualized' form of disgust implying the insignificance as well as the repugnance of the evoking stimulus. Combined with mild laughing it produces the odious expression of *sneering* (Figure 22 B, *13*). The mouth in this expression is not raised at the corners, as in frank laughter, but drawn straight back with a sardonic effect. The *upper lip*, however, is raised toward the side, baring the upper canines. Disgust is shown in the nose; while an ugly conflict is present between the laughter of the eyes and the angry slant of the brows.

Scorn, a slightly less ignoble expression, is portrayed together with watchfulness, in Figure 22 B, *14*. It is a mixture of mild anger (shown in brows) and contempt (seen in the nose). The head is averted as if to avoid the scorned object. The *scornful laugh*, Figure 22 B, *15*, again illustrates the horizontal, sardonic aperture of the mouth.

V. The Pleasure Group. The human face is as mute in its expression of pleasurable emotions as it is eloquent in the language of displeasure. Hedonic states, beyond varying degrees of the *smile* and *laugh*, have little to distinguish them. Whether the mouth is closed, as in smiling, or open, as in laughing, its corners are drawn backward and upward. In the grin and the laugh the upper lip is raised and drawn tense, exposing the upper teeth (Figure 22 B, *18*). In violent laughing the lower jaw drops far down and trembles spasmodically. In smiling the well marked naso-labial furrow is almost horizontal (see Figure 22 B, *16*). The cheek muscles are raised with the upper lip, thus pushing up the lower lid into a nearly horizontal position. The orbicularis muscles also contract partially closing the eyes (Figure 22 B, *13*, *15*, *18*). Characteristic wrinkles ('crow's-feet') are thus produced below and at the outer corners of the eyes (*13*, *18*). In Figure 22 B, *16*, however, the eyes are wide open and slyly directed askance; and repressed mirth is implied by keeping the lips closed during so broad a smile. The artist's apt title for this picture is "*Meaningful Smiling.*"

The scornful laugh implies mere amusement at the scorned one. The malicious, vengeful laugh, and the laugh of released envy (*schadenfreude*) are sardonic forms modified by angry brows. The mouth slightly opened and smiling, with rapt gaze, expresses *expectation* or *desire*. Smiling also combines with the surprised countenance as in *delight*. The expression of *love* is much more subtle and difficult to describe than the expressions of other emotions.[1] The pleasure in love is, of course, expressed by a smile, and by a mimetic expression of sweetness.[2] The eyes are kindly, as in smiling; or else open wide at the loved object, as in the infatuated

[1] Rudolph's entire collection of 680 faces does not present a single example.
[2] *Vide infra.*

maiden who cannot take her eyes from her lover. *Admiration* and *devotion* are expressed by similar looks, the former having also an element of amazement. The smile of *entreaty* (Figure 22 B, *17*) is somewhat similar to the expression of love. In love, laughter, and good spirits generally, the eyes are bright and glowing. The tender expressions of *pity* and *sympathy* merely add a suggestion of love to the facies of sorrow, the emotion with which we generally sympathize.

VI. The Attitudinal Group. In addition to the emotional play of the features there are facial reactions of an intellectual sort. They portray such attitudes as belief, incredulity, certainty, helplessness, and the like. Admitting a wide range of individual difference in these mannerisms, we may mention a few which are fairly universal. *Doubt*, or *hesitation*, is expressed by raising the brows. The eyes, however, are not widely opened as in attention or fear. Incredulous or *critical doubt* adds also a protruding or pursing of the lips. For both these expressions see Figure 22 B, *10*.[1] Raised brows and a wide direct gaze after speaking serve as a facial *interrogation* point, and demand an answer. *Determination*, or command, the facial imperative, is shown in the firm closure of the lips and teeth, tense jaw muscles, and wrinkles beneath the lower lip and upon the chin. It is represented in conjunction with hateful distrust in Figure 22 A, *7*.

For convenience of review the facial expressions are classified according to both the emotions and the features in Table V.

Dynamic and Bodily Components of Expression. The foregoing account has dealt with facial expression in a stationary, photographic manner. Dynamic aspects such as the shifting of the eyes, the quickness of the frown, and the changes in respiration, require a motion-picture in order to complete the analysis of expression. A great deal also is added to facial expression by the accompanying position and movement of the head, arms, hands, and body. In many cases they enable us to read a significance into the facial aspect which we otherwise should miss. The hands held vertically in front of the body with palms inward convert a sober, upward gaze

[1] Those who are in the habit of giving oral tests to children know the importance of avoiding such expressions as these.

into a religious expression. With palms forward in front of the chest, and fingers joined, they connote repulsion or a command for silence. When the hands are held somewhat lower, with palms

TABLE V. SYNOPSIS OF FACIAL EXPRESSIONS

	PAIN AND GRIEF	AMAZEMENT AND FEAR	ANGER	DISGUST	PLEASURE (Smiling and Laughing)
BROWS AND FOREHEAD	Raised. Knitted. Oblique out and down Wrinkles *h.v.*[1]	Raised. Wrinkles *h.* (amazement) (Terror as in Pain)	Lowered. Knitted. Oblique in and down Wrinkles *v.*	Slightly knitted Wrinkles *v*	Smooth (except in violent laughing)
EYES	Partly or fully closed (Tears)	Wide open	Wide open	Varying. Usually narrow, resembling smiling	Partly shut. Lower lid raised 'Crow's-feet'
NOSE	Compressed (thinned) Elongated	Alæ dilated (in terror)	Alæ dilated (in rage)	Raised. Shortened. Wrinkled Alæ raised at sides	Natural
MOUTH	Lowered. Open and skewed (in groaning)	Opened. Wide and fixed (in strong fear)	Rectangular rigid opening Exposing lower teeth	Slightly elevated	Raised. Open, upper teeth shown (laugh) Closed (smile)
LIPS	Depressed at corners Lower lip trembling	Somewhat depressed at corners	Depressed at corners Lower lip tense	Depressed at corners Lower lip protruding	Corners drawn back and up Upper lip raised, tense
LOWER JAW	Drooping	Immovable	Rigid Protruding	Raised	Dropped and trembling (in laughing)
HEAD	Sunk forward	Drawn back or averted	Advanced	Sometimes averted	Thrown back (in laughing)

[1] *h.* and *v.* denote horizontal and vertical.
Note: To be able to *produce* desired expressions memorize the columns vertically; to be able to *identify* expressions produced by others memorize them horizontally.

forward and downward and fingers spread, the effect is one of abhorrence or disgust. Raising them high and drawing them back, with palms forward and fingers spread, universally expresses amazement.[1] A cringing posture with head and eyes lowered con-

[1] These reactions belong to the class of 'emotional gestures' of Chapter VIII, and are the stock in trade of every actor and elocutionist.

verts a friendly smile into an obsequious one. Coquetry resides in a sweet, smiling expression with lowered head and upward glance.[1] We often assign to facial expression that which we infer from the rest of the body. It is indeed difficult to distinguish between the expressions *manifest* in the face and those which we *project*, or read into it, from the posture, the gestures, or the situation.

The Theory of Facial Expression

Darwin's Three Principles. Travelers have reported that facial expressions are substantially the same for all races of men, primitive or civilized. They also appear to be innate, since they develop in children without any conscious process of learning. They are not acquired from the social environment, for they are observed in the congenitally blind. Certain of the expressions, moreover, are common to man and the lower animals. The universality and antiquity of these reactions challenged the interest of the great evolutionist, Charles Darwin.

The well-known 'three principles' of Darwin may be stated as follows: (1) The first is that of the survival of *serviceable associated habits*. Facial reactions were originally used by our remote ancestors as means of defense or satisfaction of needs. They were transmitted as inherited reflexes to the descendants. The latter no longer needed them; but they persisted because 'deeply ingrained in the germ-plasm,' and became simply 'facial expressions' characteristic of certain situations. They are the last vestige of the total primitive reaction which our forbears made to objects arousing the emotions. We no longer attack with our teeth; but our simian (and perhaps human) ancestors did so, and we still uncover our teeth in the snarl of anger. The oblique eyebrows of pain Darwin explained as follows. The primitive and infantile reaction to pain is violent screaming. In this the eyes would become harmfully engorged with blood were they not compressed by the contraction of the corrugator, pyramidal, and orbicular muscles. As civilized adults we usually inhibit screaming in painful situations; but the *less voluntary*, and hereditarily associated,

[1] For further illustrations consult the photographs in the textbook portion of Rudolph's work.

contractions of these muscles still take place. We therefore overcome the pull of these muscles by voluntarily contracting the central part of the frontalis muscle. The eyebrows are thus both knitted and raised in the center, giving them the familiar oblique position. The expression of disgust is similarly explained as the facial vestige of the total reaction of vomiting, no longer required in our contacts with offensive objects.

(2) The second principle is that of *antithesis*. Darwin conceived that emotions were ranged in pairs of opposites. The fact that one emotion had acquired a certain pattern of response he considered was sufficient ground for its opposite to be expressed by opposed forms of reaction. Thus the cringing and fawning of the happy, affectionate dog, together with his lowered ears and tail, and sinuous movements, could be understood only as the opposites of the erect and stiffened posture, and pricked up ears and tail, of the dog in anger.

(3) Other expressive reactions were ascribed by Darwin to his third principle of *direct action of the nervous system*. In emotions there is a diffuse flow of motor impulse into whatever channels afford the readiest outlet, habits, of course, belonging to this class. We have here also such involuntary effects as trembling, writhing, blushing, respiratory changes, and erection of the hairs.

A Reinterpretation of Darwin's Theory. Captious critics have sought to minimize Darwin's expressional theories in contrast with his main contribution to science. When reformulated, however, in the light of recent conceptions we shall see that they still bear the stamp of his genius for sensing important truths. In the first place he demonstrated that facial expression, or communication, was not the original function of the facial muscles; but that such biological ends as mastication, dilatation of the nostrils for breathing, and shading the eyes were their proper functions. The purpose to express was therefore not the origin of this behavior. It seems however that Darwin neglected the possibility of the facial movements *becoming* important in adaptation to the social environment. In earlier chapters we have seen that, in both lower animals and man, original vocal utterances and gestures which were purely random or emotional in character have become definite means of

communication. Other creatures first understood them through their association with the actions they accompanied, and reacted for their own good. Then, since they served in this way as means of conditioning the behavior of others, they finally became true language stimuli and were used for social control. It is likely that facial expressions have followed the same course of development. Beginning as complete reactions of the whole animal (attack, biting, etc.) they were shortened to those facial and bodily components alone which could serve as expressive signs for controlling others (facies of rage, etc.).[1] Where a more adequate language has evolved, as in man, they serve to emphasize and lend emotional color to the words themselves.

Darwin's three principles may be most conveniently examined in the reverse order to that of their statement. First, as to the 'direct effects of the nervous system.' Most of these seem to be a part of the general and diffuse emotional response controlled by the autonomic. They belong with the class of visceral reactions described in Chapter IV. It is at least probable, however, that the facial reactions also come under autonomic control; and that *they too* are 'direct effects' or parts of the emotional response, rather than expressions of an emotion first aroused in the cortex and then expressed in the face. From the James-Lange viewpoint consciousness of these reactions constitutes a part of the emotional experience itself.

We have advanced the theory in Chapter IV that the visceral changes in emotion are based upon the principle of muscular antagonism between the effects of the cranio-sacral division for pleasant states, and the sympathetic for unpleasant ones. The further application of this view, together with the suggestion just made as to the autonomic control of expression, would account satisfactorily for the two basic and antagonistic forms of facial expression (pleasant and unpleasant) described on page 203. We arrive in this way at the second principle, the antithesis between certain emotional expressions, which Darwin recognized, but did not satisfactorily explain. The examples cited by him of human and animal be-

[1] Dr. Craig in particular attacks the Darwinian assumption that expressions are *useless* inherited reflex patterns (see reference cited at the end of this chapter).

havior in pleased and displeased emotional states clearly illustrate the antagonistic action of the expressive muscles. His limitation lay in his failure to observe that antithesis applies, *not* to emotions as a whole, but only to their *affective components*, pleasure and unpleasantness. The antithetical relation holds between emotional expressions because they contain as components these two antagonistic affective reactions of the face.

We find, therefore, that by including expressions themselves in Darwin's principle of direct (autonomic) response, and by giving more precise and physiological definition to his theory of antithesis, these conceptions may be fitted into an acceptable scheme of explanation.

We have previously seen that the emotional states of the newborn child consist of an undifferentiated, unpleasant affectivity (protopathetic state); the special emotions of fear, anger, and the like developing later. Similarly, the sole facial expressive equipment of the newborn babe is that of bodily pain. Smiling, the basic pleasant expression, developing within a few weeks, also considerably antedates the expression of any *particular* hedonic emotion. Our emotional theory offered the explanation that the different emotions (fear, anger, love) were developed through the addition of somatic responses of escape, attack, affection, and the like, toward the stimulating objects. May we not therefore expect that the facial reactions, constituting a part of the emotional response, develop in the same manner? This question leads us back to the first principle of Darwin and the genetic explanation it advances.

Darwin, to recall briefly, regarded expressions as inherited vestiges of serviceable habits acquired by our anthropoid ancestors. To the inheritance of facial reflexes we can surely find no objection. But in the innate connection of these reactions with complex and meaningful situations, we reëncounter the confusion of the instinct hypothesis. Our recourse is, as formerly, to ontogenetic development.

We may begin by attempting to explain the frown. In infancy thwarting or irritating stimuli caused fits of crying with the attendant contraction of the corrugator and other muscles. We are not here concerned with the origin of the brow contraction in *crying*.

It is no doubt an innate reflex serviceable, like respiration and sneezing, to the child himself. We are interested merely in knowing how the brow contraction happens to be associated as a *frown* with *pain* and *anger*. This may be explained, as Darwin said, by the persistence of a response, once serviceable, in situations similar to the ones in which it was originally evoked. That is, in later life when hurtful or thwarting conditions arise, although the screaming fit may be inhibited, the semi-involuntary brow contractions remain and become an expressive abridgment of the whole pain or anger response. So far we have sound behavior psychology, and can agree with Darwin.

But this statement implies no reaction whose expressive significance is *inherited* as a vestige of an *ancestrally* useful habit. The original response was serviceable for the life of the individual himself, and within his life passed into an expressive act. That the baby's ancestors protected their eyes in screaming by the frown is of no particular interest to us; it is sufficient to know that the baby himself does.[1] Nor do we need 'innumerable generations of screaming and frowning infants' in order to fix the expression. If the baby in question were the first child who had ever frowned in crying we could account equally well for the expressive rôle the frown assumes in his adult behavior.[2]

The same may be said of the exposure of the teeth in rage. Biting becomes a part of the prepotent struggle response of young children. Tendencies to bite destructively are often inhibited by the social environment. Biting also is not uncommon in the fighting of civilized as well as primitive adults. It is significant that the baring of the teeth in anger does not occur until late infancy or childhood, that is, until the use of the teeth as tools and weapons is well advanced. Darwin's formula was, "The ancestor bites in angry attacks and the child instinctively expresses rage by baring his teeth." Our revision would read, "The *child* bites and so

[1] Besides, we are far more certain that the baby has screaming fits than that the pre-human adult had them.

[2] Darwin himself seemed to recognize this fact at times. Though his introductory chapter makes use of the 'inherited vestiges' notion, relatively little application of it is made in dealing with specific expressions. Disgust he explains solely from infantile behavior.

The vestige theory has been developed to a rather far-fetched conclusion by Herbert Spencer.

acquires the habit of expressing rage by baring his teeth." The original movements of nausea similarly are facial reactions accompanying vomiting and tasting bitter or nauseating substances. These are made early in life by the child himself and form the basis of the later appearing expressive reaction of disgust.

Darwin's first principle therefore is accepted with the important modification that the original serviceable reflexes, but *not* their expressive significance, are inherited. Instead of the biologically useful reaction being present in the ancestor and the expressive vestige in the descendant, we regard both these functions as present in the descendant, the former serving as a basis from which the latter develops. Foreshortened in this way Darwin's theory becomes a useful principle of explanation.

The Mimetic Responses. Our discussion up to this point has been largely concerned with the motor side of the facial reactions, explained by Darwinian principles. There now remains the problem of their extension upon the afferent side. Originally evoked only by biologically prepotent stimuli (pain, noxious tastes, etc.), facial expressions come eventually to be produced in response to objects or situations, often social in character, which are merely *analogous* to the original stimuli. The recognition of these analogies constitutes the *mimetic theory* of Wundt and Piderit. Disgust is an excellent example. The facial reaction here is that accompanying the rejection of an unsavory substance from the alimentary canal, as in vomiting; or the puckering of the nose so as to prevent the entrance of unpleasant odors into the nostrils. Originally this response was produced *only* when stimulated by such disagreeable substances; but with increasing development it becomes extended to persons, language, scenes, and proposals which offend one's æsthetic habits or moral principles. The language of the face is cruder and more frank than that of the tongue. To look at a person with contempt is to say to him mimetically, 'I can't stand your odor!' To look at him with loathing is to liken him to an intolerable substance which one is about to vomit.[1]

[1] Darwin's theory implies the mimetic theory in that it ascribes the origin of expressions to originally serviceable habits, quite useless in the situations in which they later are called forth; but it does not do justice to the analogical association of certain expressions with particular situations.

Since one of the original functions of facial muscles was movement facilitating smelling and tasting, there is good reason for including these reactions as sources of expressive meaning. The mimetic of gustatory movements is especially interesting. In tasting a sweet substance the lips are closed and drawn back against the parted teeth so that they come into contact with the tip of the tongue and help rub the sapid stimulus against the taste buds. This 'sweet' expression of the face is extended by analogy to all persons who arouse pleasurable reactions in us. It passes readily into smiling. In the 'bitter' expression the blade of the tongue is drawn as far down as possible away from the palate so as to minimize any taste-enhancing contact. The result is the lengthening of the naso-labial distance, as seen in countenances of hate and bitter envy. The pursing of the lips in mentally examining some new proposal or theory is mimetically described by Piderit as the movement of tasting an unfamiliar substance.

The field of analogical extension, however, is wider than that of the alimentary functions. We express grief or remorse facially almost in the same way as we do *bodily* affliction. Refined persons ofter react to insulting proposals as they would to threatening objects, namely, by winking their eyes. We frown when thwarted in our movements; we frown also when in thinking we come to some perplexing (thwarting) problem. As babies we laugh when a sudden movement is made toward our ticklish parts. When we are grown up we laugh at any incongruous (hence sudden) situation, or at a 'thrust' of wit. In our efforts to draw on a refractory boot we set our jaw firmly. This produces the same 'determined' expression with which we coërce a stubborn child. We raise our brows and wrinkle our foreheads when surprised; we raise them also when in doubt, for doubt is a kind of internal surprise. The object of surprise is unfamiliar to our senses; the object of doubt is unfamiliar to our habits of thought.[1]

Theory of Mimetic Expression. The language of facial expression is thus largely one of unconscious metaphor. How these metaphors come into existence we can only conjecture. The

[1] Mantegazza cites a number of these 'synonyms of expression.' See his *Physiognomy and Expression* (English ed.), pp. 90, 91, 103.

situation, being a stimulus substitution, is strongly suggestive of the conditioned response. The difficulty with this explanation, however, lies in the fact that the new stimulus does not need to be present at the same time that the response to the original stimulus is evoked. Persons arouse our expressions of disgust although we have never seen them simultaneously with smelling a bad odor. Some mediating link is therefore needed that will explain the transfer not by contiguity but by analogy. We venture the suggestion that a bodily or neural setting of some sort provides such a link.

Suppose, for example, that we are confronted by a person we had thought to be on another continent. We raise our brows in astonishment. At the same time there occurs a suspension of all our bodily responses because of our lack of preparation for the surprise. This suspension constitutes our 'setting' for the moment, and it undoubtedly affords proprioceptive stimulation from the muscles and joints. These latter stimuli serve to condition the brow-raising response which they accompany. Now let us suppose that some friend tells us he has been to a *séance* and has talked with his dead uncle. We are startled by this information, and immediately become doubtful or even incredulous. It has given our habits of thought the same sort of surprise that the unexpected appearance of an acquaintance gave to our settled attitudes of overt response. Modern psychology, however, teaches that thought is also a sequence of bodily attitudes. Its responses are aroused in the form of internal speech, or other symbolic reactions representing objects, as truly as outward behavior is evoked as a reaction to the objects themselves. Our thought attitudes under the influence of our friend's remark would thus be blocked, precisely as our overt responses were in the former instance. This blocking, however, provides proprioceptive stimuli which have previously become adequate for evoking the reaction of raising the brows: hence this response takes place. We learn, therefore, to raise our brows in doubt just as we do in amazement. An intermediary or common bodily setting would thus account for the transfer from the original to the mimetic signification. In behavioristic terms this setting would be the *meaning* of the situation and of the facial expression.

A further possibility is that these intermediating stimuli might arise from faint language responses. Mimetic expression does not occur in children until the beginning of true speech and understanding of words. It is also absent in animals below man, that is, among creatures who possess no articulate language.[1] Furthermore, human speech is as rich in affective metaphors as is facial language. We may cite such familiar phrases as 'mental anguish,' 'a bitter cup,' 'a bitter pill' (slang), 'he makes me sick,' 'biting sarcasm,' 'filthy habits,' 'poking fun,' 'tickled to death,' 'sweet disposition,' and 'stiff-necked.' In so far as this possibility is realized the social environment, by calling attention verbally to these analogies of feeling and sensation, plays a part in the development of the expressive function. In the race, however, the bodily settings must have been the original causes, for the language symbols are but names for these settings.

Summary. We may bring together the various threads of the discussion in the following statements. Expression as such is neither an original nor an inherited function of facial muscles. It develops, probably within the early life of the individual, from facial reflexes serviceable in other ways to the organism. Among animals and primitive peoples it may acquire significance as a form of social control.

Genetically facial expressions are built upon two fundamental and antagonistic affective expressions, the pleasant and the unpleasant. These facial reactions are innate accompaniments of their respective feeling states. They give an antithetical aspect to the full emotional expressions into which they enter. They are earliest in appearance in the life of the infant, and are gradually modified by the addition of special muscular contractions serving such biological uses as protection of the eyes, rejection of bad tastes and smells, biting, mastication, and facilitation of looking, listening, smelling, and tasting. In many situations of this kind in later life, these adaptive reactions are either reduced, inhibited, or disused; or else are called forth as mere analogies to their original function. The movements of the facial muscles, however, remain and serve as indices of the emotional states or attitudes involved.

[1] A possible exception may occur in the case of some of the anthropoids.

Upon the afferent side the expressions become conditioned by increasingly remote and 'intellectualized' stimuli bearing merely an analogy to the original stimulus. This analogy is carried as an intermediary bodily setting, aided perhaps by language symbols.

Expression through Posture and Physiognomy

Muscle Tonus and Posture as Social Stimuli. If we place a cat upon the floor its legs will stiffen as soon as its feet touch, and a standing posture will result. If its cerebral hemispheres are removed this reaction will still take place. It is explained by the fact that kinæsthetic or tactual stimuli in the legs or feet send impulses to the cerebellum, whence efferent impulses pass outward again to the extensors of the limbs causing them to become fixed and to resist flexion and collapse as gravity pulls the animal downward. The standing and in fact many of the postures of human beings are due to the same sort of mechanism. Continual postural reflexes keep up a steady, unconscious flow of mild innervation, holding the skeletal parts in useful positions against the force of gravity (see p. 26). We can thus stand, sit, or hold objects in our hands without conscious effort or fatigue. Another important function of tonic contraction is to prepare our muscles for rapid and energetic action; for a high level of tonus is the physiological basis for the vigorous movements of the executive or leader. Postural tonus varies with the state of the organism. When refreshed, cheerful, and in good health it is well maintained. In opposite conditions our muscles are flaccid and inert, and we seem to be 'losing our grip.'

Some of the best examples of the social effects of tonicity are seen in military and other forms of drill. Some drill masters, whose tonus is high, suggest power and energy in their bearing and every syllable of their commands. Troops respond immediately and almost unconsciously by greater snap and precision of movement. Officers' 'Click Schools' established in war-time army camps had this very purpose in view; for the effect upon the morale of troops exerted through the bearing and energy of their officers is axiomatic in military life.[1] The same influence is felt in the contacts of

[1] The ideal, reiterated in these schools, of the officer as an *upstanding man* is a literal recognition of muscle tonus as a power in resisting gravity.

personalities in daily life, and in the establishment of the ascendant-submissive relation. The firm grip of the hand inspires us with energy and confidence; the flabby handshake, literally speaking, makes us tired.

A sudden increase in tonus level, seen as *alertness*, together with orientation toward some object, forms a most compelling stimulus to others. A group of people on the street alert, motionless, and all facing in the same direction, catches the corner of our eye with amazing swiftness. Changes in the posture of a few pigeons quickly sets the whole flock into alarm and flight.

Physiognomy. The human face in its quiet, unemotional moments is a significant social stimulus in the clue it gives to the possessor's habits and personal traits. Two factors enter into physiognomy as an indication of character: (1) tonus level, and (2) habits of the features and permanent wrinkles formed at right angles to the direction of contraction of frequently used muscles. A slight perpetual frown frequently indicates the irascible temperament, while 'crow's-feet' show about the lids of the jovial fat man. Mild contempt is a physiognomic trait of the 'exclusive' person. The 'sweet' and 'bitter' personalities are often told by their facial postures. The hard expression of the criminal is of the bitter type. Occupation or habits are also revealed, as in the 'used' and mature look about the eyes of the student. 'Wear and tear' on the face often betrays character. Flabbiness of feature, sagging of the eyelids, and a used, inelastic drag of the lips signalize the roué and the prostitute. Dissipation of bodily resources has brought facial tonus to its lowest ebb. Stimuli of this sort are often responded to unconsciously, or, as we say, intuitively. Yet they determine an infinite variety of subtle approaching and avoiding tendencies which we display toward our fellows. For one sensitive to such influences an hour spent in a café frequented by debauchees, or in a street car gazing into the worn or expressionless faces of shoppers and laborers, becomes intolerably depressing.

Observation of physiognomic traits based on tonus and on temperament and habit shown in the face is a useful supplement to the methods of personality measurement described in Chapter VI. Many persons have tried to analyze character, temperament, and

even abilities, by dimensions of the forehead, prominence of the chin, shape of the nose, convexity of profile, texture of skin and hair, and other morphological aspects governed by metabolism and skeletal growth rather than by behavior. The correlation of these factors with personality is unproved and probably remote.[1] Differences of texture and fineness of feature no doubt sometimes distinguish opposite extremes in human breeding, just as the race horse is finer and cleaner limbed than the draft animal. Mental defectives have facial crudities, or stigmata, and as a rule, undersized crania. But these of course are extreme types. Experiments have shown that ability to estimate intelligence from photographs is so low, even with very intelligent persons as judges, that the method is of little value in employment selection. Here again, the extremes of intelligence and stupidity are recognized; but not the more moderate grades. There is little, therefore, to justify the absurd pretension of the 'character analysts' that their methods constitute an exact science. Facts of behavior, and evidences of behavior traits seen in the face are the only reliable criteria of personality.

The Stimulus Value of Facial and Bodily Expression

Genetic Aspects and Extremes of Sensitivity. Within a few weeks after birth the infant manifests an interest in the grimaces of its elders. Movements of mouth and eyes, made close to him, cause him to fixate the expressions with an attentive frown and to cease his random kicking and squirming. The closed fist is sometimes held out toward the stimulating countenance. As early as six months of age the baby begins to watch the play of the features and to connect with them a meaning for self-adaptation in a manner previously described. Professor Cooley observes, no doubt correctly, that the response to facial expression is learned rather than instinctive. The smile is a social conditioner of the child's pleasant experiences. Hence it evokes his smile as a part of his own pleasure response, and not as an imitation of his parent's expression. The

[1] The pseudo-science of physiognomy is phrenology with the 'bumps' moved down onto the face. For a modern example, see G. E. Fosbroke's *Character Reading through Analysis of the Features.* It contains some useful suggestions *if read with discrimination.*

expression of anger produces in him, not the instinctive fear of a wrathful visage, but fear and avoidance of the unfamiliar. Since response to facial expression antedates that to articulate language, expression becomes an early stimulus for conditioning the prepotent activities of approach and withdrawal. The year-old child reacts quickly to new situations on the basis of expressions manifest in his parents' faces and postures; and comes also to look for these expressions in order to direct his reaction.[1] Children do not learn to make facial expressions by imitating their elders; nor do they often mimic expressions or physiognomies in their pantomimic play.

We have previously referred to the unusual sensitivity of such animals as Clever Hans in reacting to small clues furnished by unconscious movements. Certain persons also develop this ability to an extraordinary degree. So-called mind readers and spiritualists rely on subtle indications of facial expression, voice, and bodily movement in response to questions they put to the subject. These stimuli are often so slight as to elude their own consciousness; they seem, even to themselves, to be following the guidance of mystical forces.[2]

Experiments in Reading Facial Expression. The stimulating power of facial expressions must of course be measured in terms of the differential responses which subjects are capable of making to them. The language reaction has been used in all studies made up to the present time; the significance of the expression for the subject being assumed to be commensurate with his ability correctly to name it. Unfortunately it has been necessary to use photographs rather than actual faces, because of the impossibility of obtaining standardized stimuli in the case of the latter. The cinematograph may afford a more dynamic and realistic technique for future experiments. The results thus far achieved deal with three main questions. (1) How many and what facial expressions are

[1] Many parents assert that their children have inherited their own fears of certain objects, because they have 'never said a word about it' to them. The fact is that they have involuntarily said a great deal through the language of emotional expression and bodily attitude. To the child the attitude of the parent is often more significant than words.

[2] A remarkable case, elucidated experimentally by Professor Stratton, is cited in the references at the end of this chapter.

accurately identified; and what characteristic confusions exist? (2) What methods are used by the subject in identifying them? (3) What differences between individuals exist with respect to this ability, and how are these differences to be interpreted?

1. *How many and what expressions are correcily named?* In 1917 Professor H. S. Langfeld conducted a study with 105 pictures selected from the same source as those of Figures 22 A and B, and representing fourteen distinct groups of facial expression. In some of these tests five subjects were used, and in others, six. The subjects examined the photographs and named the expressions in their own words. A total of 525 judgments were obtained, of which only about 33 per cent were correct. If only the eight groups in the following table are selected (the others being unusually difficult or perhaps only 'projected' expressions) the accuracy rises to 43 per cent, which is still surprisingly low. Laughter was the most readily identified, being correctly named in 64 per cent of the cases; anger the least readily (30 per cent accuracy). Pain was also readily seen (50 per cent); while disgust and fear were low (36 per cent each).

Another method of determining accuracy in this function was developed as a *facial expression test* by the present writer. Fourteen of the Rudolph pictures (previously selected by Professor Langfeld) were shown as lantern slides to various classes of students. Each subject was given a sheet containing fourteen groups of names of expressions. Each of these groups comprised eight titles, some approximating that of the corresponding picture, but only *one* absolutely correct. The task required was to underline the expression in each group which best suited the corresponding picture. Partial credits were given for the approximate names. A perfect score — that is, correct titles chosen for all fourteen pictures — was considered as 100 per cent.[1] Employing this method results were obtained somewhat similar to those of Langfeld. The average scores attained by various groups of subjects ranged between 45 and 50 per cent.

[1] By the use of this method — that is, with names given to choose from — individual differences in the result stand as differences in ability to react to the expression, and not as differences in fluency or vocabulary.

Table VI presents the rank order of the more important expressions according to the frequency of correct identification in these two investigations. The first expression in each column is the one judged correctly in the greatest number of cases; the second expression is second in accuracy of identification, and so on.

TABLE VI. FACIAL EXPRESSIONS IN ORDER OF IDENTIFIABILITY

(LANGFELD) 6 subjects 105 pictures	(ALLPORT) 48 subjects 14 pictures
Laughter	Laughter
Amazement	Bodily Pain
Bodily Pain	Fear (Horror)
Hate (Aversion-Hate Group)	Distrust (similar to Hate)
Fear (Anxiety-Fear-Terror Group)	Amazement
Disgust (Scorn-Contempt Group)	Anger
Doubt	Doubt
Anger (Anger-Rage Group)	Disgust

Laughter and bodily pain stand out as the most readily identified of the expressions. This fact accords with our earlier treatment of them as the basic affective patterns underlying all emotional states and their expressions (see pp. 86, 212). Disgust, anger, and the attitudinal expression, doubt, stand last in correctness of judgment. Amazement, fear, and hate are intermediate.[1]

The pictures in the groups of expressions named in the left hand column of Table VI were later presented to the subjects again with the artist's title, for acceptance or rejection. In 77 per cent of the pictures the artist's title (presumably the correct one) was accepted. Suggestion was not the only factor here, for when the same pictures were presented at a later time with suggested erroneous titles, less

[1] These results confirm the findings of a rather extensive pioneer investigation by Dr. Antoinette Feleky, and are confirmed by a more recent study by Dr. C. A. Ruckmick. Both these investigators, however, found the disgust group interpreted with high accuracy. Photographs of a woman were used in both cases; possibly this expression is more marked or more recognizable on the female face. See references at the end of this chapter.

than one third were accepted. Although the ability correctly to *name* a facial expression is generally low, the meaning of it is readily seen when its true name is given.[1] As to special cases of confusion, violent expressions of pain, rage, and terror were sometimes not distinguished. Similarity of brow wrinkles was probably the cause of the failure to discriminate. Strong amazement and fear were also confused. Subtler components in strong states were somewhat obscured by the major emotion, though they were at once recognized when pointed out. Some subtleties, however, were well observed, such as vindictiveness in anger, anger in scorn (bitter expression), and conflicts, for example, between jest and earnest. (Langfeld).

2. *What methods do the subjects use in identifying facial expressions?* A significant fact in the studies by both Langfeld and Ruckmick was the manner in which the task was performed. The reports of most of the subjects agreed in the endeavor to imagine *a concrete situation* in which the expression they were examining would be appropriate. The following are instances of this attempt: imagining one's self as the object of the emotion expressed, or as a spectator; imagining what object could be before the man's eyes to evoke such a response; visualizing the expression on a friend's face and deducing its cause; recalling an actual situation in which a similar expression was seen; developing auditory imagery of what the man might be saying. The association between the face and the attendant circumstances is thus seen to be very close. We do not react to facial expressions alone in daily life; and we can scarcely do so in an experiment. The situation as a whole — words, gestures, postures, and known circumstances — lend an indispensable support in our interpretation.

An auxiliary method frequently used was the attempt to imitate the expression with the subject's own features. The purpose of this procedure seemed to be to receive all possible stimulations (facial in this case) which might bring up by association (conditioning) *situations in which such expressions were previously experienced*, thereby receiving a clue for the identification. It is more difficult,

[1] Darwin, in a slightly different fashion, encountered the same phenomenon (*Expression of Emotion in Man and Animals*, p. 14).

however, to derive the situation from the facial expression than to recognize the expression once the situation is known. This truth is a matter of common experience. When we come upon an individual or a group of people expressing some strong emotion, we immediately attempt to find out *what has happened.* This knowledge at once gives significance to the otherwise chaotic mass of facial expressions. Dropping into the middle of a moving-picture show, we find the expressions of the actors merely a disturbing or ridiculous set of grimaces until we have caught up the thread of the story.

We are now able to explain the immediate recognition of an expression, and acceptance of the artist's title, once the name of it is given. Words are integrated most minutely with all our bodily attitudes. Merely hearing the name puts the subject into a definite situation. If the expression seems to 'snap into place' in this perceptual setting, the suggested name is accepted; if not, the name is rejected.

A third method of identification used by some was to make an analysis of the various components of the expression.

3. *How do individuals differ in their ability to name facial expressions; and to what are these differences due?* A wide range of ability exists among subjects for reading expressions. In testing several college classes with the facial expressions test described above, the writer has found scores ranging between 21 and 72 per cent, fairly evenly distributed according to the probability curve, with the median (middle score) at about 48. There is no pronounced difference between the sexes in this capacity.[1] Are these wide individual variations due to differences of innate susceptibility to social stimulation, or do they result from discrepancies in practice and in the methods employed? To answer this the writer conducted three lines of experimentation, dealing with variations in the three methods described under question 2.

(*a*) The effect of *analysis.* We may first inquire what difference

[1] An interesting difference, however, is shown in the time required to make a decision in regard to the picture. The women made their judgments in about one half the time needed by the men. The inference is that the factors upon which the decision is based are less consciously reasoned (more 'intuitive') with women than with men.

is made in one's performance by a knowledge of the emotions expressed by positions of the various features taken separately. The facial expressions test was given to twelve young women. They were then asked to study a chart of expressions similar to Table V for a period of fifteen minutes, after which they took the test again and made use of what they had learned. The results are presented in Table VII.

TABLE VII. EFFECT OF KNOWING HOW TO ANALYZE EXPRESSIONS UPON SUCCESS OF IDENTIFYING THEM

SUBJECT	I Score before study of chart	II Score after study of chart	III Gain through study
Cu	64	50	−14
Mu	61	53	− 8
Pe	59	57	− 2
Fi	59	59	0
Mc	52	61	9
Le	48	52	4
Ko	47	59	12
St	46	48	2
Ke	45	65	20
Ba	39	46	7
He	38	59	21
Ha	28	48	20
Average	48.8	54.7	5.9

Correlation between ranks in columns I and III: $r = -.86$

Judging from this table the following interesting facts and conclusions may be established: (1) Out of twelve subjects, all but four improve in their identification of facial reactions with study and application of the principles of expression. (2) Practice in this regard tends to equalize the ability of the various subjects. The less efficient gain the most, and the more efficient gain the least. The three best judges in the original test actually lost after study of

the chart, and lost in direct proportion to their ability. The gain of the poorer judges was also roughly proportional to their *lack* of ability.[1] There is, in other words, a fairly high inverse correlation (−.86) between the original ability to name expressions and the improvement through learning how to analyze the component positions of the features.[2] (3) We conclude, therefore, that while there may be innate differences of a general sort in the sensitivity required to learn facial expressions, the broad differences between individuals in this respect are due to differences of practice in reacting to the expressive criteria. Some persons, through special incentive or opportunity, have already learned how to read faces, and probably at an early age. The *methods* by which they do it have become automatic and unconscious through continual use. To recall them, therefore, as in substituting conscious analysis, proves an unnecessary distraction and in some cases actually hinders their judgments, in the same way that playing with notes a pianoforte piece one has long played from memory usually confuses one. Others have never had the drive or the occasion to observe what emotions facial reactions indicate. The less they had noticed them the lower they stood in the test: hence their great improvement when this knowledge was acquired and used.

(*b*) The effect of *reacting to situations* given in words. The second experiment was performed upon a mixed group of fourteen subjects, and consisted of two parts. In the first, the test pictures were given the subjects with a list of twenty-eight names. They were asked to examine each photograph carefully and select the most suitable title from among those offered. One week later they were given the pictures again with the list of names in a different order. The pictures were spread out and each subject was asked to fix his attention upon each *title* given in turn, and try to develop in himself the emotion and expression indicated by that title. With this state fully aroused he was to look over all the photographs and select that which best fitted the emotion he was experiencing. Thus in the first case the task was to find a word to

[1] Note that in column I the poorest subject is 36 per cent below the best; after study (column II) she is only 2 per cent below the same person.

[2] For an explanation of correlation see p. 131.

suit the expression; in the second it was to fit an expression to the word. The results were strikingly similar to those of the preceding experiment. One half the subjects succeeded better with the first method, and the other half with the second. These were the better and the poorer judges respectively. The more efficient were uniformly and slightly reduced in their scores by fitting the picture to an adopted situation; the scores of the less efficient were considerably enhanced by this method. The correlation between improvement through the second procedure and original ability in the test was therefore again inverse (−.54). Here again the superior judges seem to react almost 'intuitively' to the face itself. The inferior ones are aided by grasping at any clue which will support their meager understanding of the features.

(*c*) The effect of *imitating the expression.* A final experiment was conducted to determine the result upon the test score of trying to imitate with one's own features the expression shown. The compared results of two sets of scores, one with and the other without imitation, confirm the tendencies shown in (*a*) and (*b*). In the superior half of the group slightly more were hindered than were helped by the use of imitation; in the lower half almost twice as many were helped as were hindered by this method.

Further Interpretations. A few remarks may be added upon the question as to why some persons naturally acquire this facility in judging faces while others do not. It has been found through a visual observation test that this ability does not correlate with powers of observation in general. Some special incentive or reason must, therefore, be found for the tendency to observe faces in particular. Opportunity may have had some influence, as in the contrast between the only or the solitary child and the child in a large family. Special abilities or interests, such as the literary and artistic, appear to have some relation to the social sensitivity. The personality type, especially in the relations of the individual to his social sphere, seems to be fairly significant. The self-conscious or submissive individual who avoids face-to-face contacts, especially in strenuous moods, and who is somewhat embarrassed in the presence of 'scenes,' would naturally miss many opportunities for learning the vocabulary of facial expression. In the group of

twelve young women tested, the scores showed a slight correlation (.45) with ratings in the trait of ascendance-submission. The reclusive, self-centered, and asocial individual may also stand low in the test through indifference to the reactions of others. It is impossible, however, to generalize, since a drive for reading others may develop as a compensation for *defect* in the social sphere. No single cause, but a complex of capacities, circumstances, and traits, appears to underlie this ability.

General Aspects of Expressional Stimulation. The language of facial behavior is, as we have seen, a supplementary and unconscious one. While it is capable of gaining much significance through careful interpretation, in its usual rôle it is more often contributory than direct. It acquires its meaning through the bodily movements and other stimuli of the whole situation in which it occurs. As we shall see later it attains great significance as a contributory stimulus in crowds. For two reasons facial expression has been neglected by man as a form of communication. First, the language of *speech* has proved a far more versatile and practicable method. Secondly, displays of violent emotion in face or body have been discouraged by custom.

Facial expression is an involuntary stimulus which can be used to read what the individual is unwilling to make known in words. The grosser reactions we can inhibit; but a keen eye still detects the widening of the eyes in fear or doubt and the incipient frown. The psychiatrist, the lawyer, the diplomat, and the salesman depend continually upon such indications from persons with whom they deal. This is the 'halfway' or self-adapting stage characteristic of the adjustments of lower animals. One adapts himself (reacts) to the behavior of his fellows without their special cognizance. Social control through facial expression is relatively rare among human beings. In cases of secrecy where words and gestures are out of the question the twitch of the mouth, the mandatory wink, and the covert frown of warning exert direct influence upon the behavior of others.

Minor Forms of Social Stimulation

In order to complete the survey of social stimulations we must

recognize a large group of impressions purely incidental to the presence and personal behavior of others. The mere sight of others about us influences our responses in definite ways. In a room filled with workers or office clerks the peripheral vision of the movements and posture of others, the noise of their work, and even the human odor and humidity of the atmosphere, all have their effect on the total reaction of each individual. Physical contact and pressures incident to mobs and crowded streets is a stimulation which, in emotional excitement, may achieve great power. 'Shopper's fatigue' is due in part to the protracted strain of reacting to the close proximity of others, and to resisting the constant and oppressive stimulations from crowding. These minor forms of excitation are not used for social control. Furthermore they are devoid of any expressive significance. They are produced unwittingly; and are responded to neither directly nor consciously by those whom they affect. Yet they exert a powerful influence in many social situations.

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CHAPTER X

RESPONSE TO SOCIAL STIMULATION: ELEMENTARY FORMS

Types of Reactions to Social Objects. Social behavior, as previously stated, falls into two classes: the acts by which one individual stimulates another, and the characteristic responses which are made to these acts. The former class, namely the social stimuli, have been discussed in the two preceding chapters. We shall consider now the various ways in which the individual reacts to these stimulations. Not all such reactions are equally important from the present viewpoint; for many of them do not differ materially from the responses made to non-social objects. The motorist reacts to the sign 'Road Closed' in the same way that he would to a permanent obstruction placed across the highway. The fact that some human being has written the sign has no special significance. He responds to the behavior of the traffic policeman as he would to the arms of a wooden semaphore. When we follow oral directions, make use of the knowledge gained in a lecture, or obey the social stimuli implicit in the law, we are reacting a little more to the specific social element of the stimulus; but even here our behavior does not differ in kind from control and learning through contact with non-social objects. When, on the other hand, we sympathize with our friend's grief, converse with him, smile in answer to his smile, yield submissively to his suggestion, work more rapidly because he is working with us, or feel hurt or angry at his neglect, our response is uniquely a response to social stimulation.

On the side, therefore, of response, behavior shades off from types which are distinctly characteristic of the social and only the social situation, to forms which are exhibited in any kind of environment. Social psychology is concerned only with the former variety, that is, with reactions which follow exclusively or at least mainly from social stimulation. Elementary forms of such response, including sympathy, imitation, suggestion, and laughter will be discussed in this chapter.

Sympathy

The Mechanism of Sympathy. Sympathy is usually defined as 'feeling with' an individual, or sharing his emotions. It is thus no emotion in particular, but a mechanism whereby *any* emotion or feeling in another comes to arouse the same state in us. Since the principle of sympathy is fundamental in social life, it is necessary to get as clear a notion as possible of the process it involves. Professor McDougall has advanced a theory of sympathy which has been the center of much controversy. For each emotion, according to his view, there are two classes of stimuli which have the innate capacity for evoking it. One of these is the actual object, such as thwarting agencies for anger and dangerous stimuli for fear. The other comprises the perception of the emotion in question as expressed in the behavior of another. Thus the facial expression, cries, and movements of fear directly arouse fear in a person witnessing them, and arouse it, moreover, as an instinctive response. This alleged process is known as the 'sympathetic induction of emotions.'

This theory has the advantage of simplicity of statement. Deeper consideration, however, reveals certain fundamental objections to it. *First*, it presupposes the maturation of complex innate 'perceptual dispositions,' and thus incurs the objections to the general instinct theory raised in Chapter III. *Secondly*, it is seriously at odds with the experimental findings, related in Chapter IX, bearing upon the response to facial expressions in emotion. The general accuracy of individuals in identifying such expressions is less than fifty per cent. If the expression tended instinctively to evoke the corresponding emotion in the spectator, it seems certain that the ability to select the correct name for it would have been much higher and more universal. It is clear also from the experiments that the proficiency of different individuals in this regard is due not to innate reaction to expression, but to the amount of training or effort at learning which they have experienced. Again, most persons strive to recognize the expression by recalling specific situations in which such a facial response would be fitting. This last point affords us an important clue: *it is not the direct*

emotional behavior of the person, so much as the knowledge of the conditions affecting him that makes it possible for us to understand (and indeed to sympathize) with his state of mind. Thirdly, the facts not only of experiment but of real life are against the theory. If we witness the anger of two men who are fighting, our anger is not necessarily aroused. We may instead be amused, frightened, or interested, according to the circumstances. If one of the combatants is our dearest friend, we feel anger and participate in the conflict. But our anger is not a 'sympathetic anger' aroused by the sight of our friend's angry behavior. It is aroused by the enemy who is injuring our friend, and thereby thwarting certain of our own affections and interests. Here again it is the whole situation rather than the perception of an emotion in another which arouses the emotion in us.

A theory far more plausible than that of instinctive induction of emotion may now be considered. This is the principle of *conditioned emotional response.* It may be illustrated by the panic which seizes all the persons in a throng when a few of them show signs of terror. Granting that the true cause for alarm has been seen by only the original few, we have here a case of fear aroused by a process of sympathy. The explanation, according to the present theory, is as follows: We have been previously terrified in company with others and so have had our fear emotion transferred to characteristic attendant stimuli, such as the cries and visible expressions of the emotion in those about us. We now react at once to the sight of fear in others by a fear response of our own. Here the conception of sympathetic induction loses its force. We fear not merely because we see the expression of fear in others; but because we have learned to read these expressions as signs that *there really is something to be afraid of.* It is not fear induced from others that we experience, but *our own* fear of dangerous situations which has been conditioned by social stimuli.

The tender emotions of love and grief are more popularly identified with the sympathetic reaction than anger and fear. The following example is a familiar instance explained by the conditioned response theory. I receive a letter from my friend announcing the death of his wife. Suppose I have previously lost my own

wife. The words serve to recall (by conditioning) many feelings of grief and thwarted love I have formerly experienced, and I may be said to sympathize fully with my friend.[1] Let us suppose I have never experienced such bereavement. My reaction is different only in degree. I have imagined and worried about such a misfortune occurring (or I *can* easily imagine it), and have thus carried out thought reactions tinged with emotion similar to the grief of my friend. The letter announcing the sad news draws upon this stock of my experience, and I thus sympathize, though to a less degree than in the former case. If we suppose that I am not even married, my sympathetic reaction, though present, is much less still.

There is then a law that the closer the situation arousing sympathy to the past experience of the individual, the greater will be his sympathy with the person involved. This fact is the fourth and most telling argument in favor of the conditioned response theory as against the theory of sympathetically induced emotion. For according to the latter view, provided the *expression of feeling* were always of the same intensity, it would make no difference in the sympathetic response whether the situation were familiar or unfamiliar to the sympathizer; whereas, following the conditioned response theory, we should expect the arousal of the 'sympathetic' emotion to be directly proportional to the number and strength of its previous arousals in the situation in question.

Conditions Favoring the Sympathetic Response. In addition to the degree of familiarity with the situation there are several other factors which favor the conditioned release of emotional reactions by like emotional expressions in others. They have the common effect of rendering the organism more receptive to the stimulus. *Love*, in particular, involves an attitude of constant readiness to react to the behavior of the loved one. This openness to stimulation is probably a part of that general desire for contact with the

[1] Strictly speaking, however, I have no way of knowing that my emotion is exactly like my friend's. It is more properly described as sympathy with my own past experience than as sympathy with his. It contains moreover other components than revived grief for a dead loved one, for it is mingled with love, pity and other emotions toward my friend. In this sense also my whole reaction is not an exact copy of his. The popular notion, therefore, of sympathy being a replica of the feelings sympathized with is true only in the most general sense.

loved object. The mother therefore feels keenly the physical pains, and the dangers, discomforts, and disappointments of her child, because her own emotional responses are open to arousal through conditioning elements witnessed in the situation of the child. *Submissive* attitudes are similar in their susceptibility to emotional stimuli from those toward whom one is submissive. Prestige is the common basis of this relation. We know that the doctor understands the condition of our sick friend far better than we do; hence our emotional reactions are in a condition of readiness to be aroused by any evidence of emotion from this person of prestige. If his manner is confident, we are calm and reassured; if he seems apprehensive, we take alarm at once. In the late war the writer felt a distinct wave of terror upon seeing some French troops look up into the sky and run for cover. The new American troops were always in readiness to react to the signs afforded by the soldiers of armies which had had long experience in the trenches. The quick, emotional response of the child to the emotion shown by the parent is based on this same submissiveness to prestige. One other condition favoring sympathy may be mentioned; namely, the *nearness* and *vividness* of the emotional expression and situation. We are thus inclined to feel deeper sympathy for the cry of a hungry child on the street than for the starving thousands which we read of in newspaper accounts of famines.

The Social Significance of Sympathy. Sympathy, though important in enabling human beings to understand one another and so live together, is not in itself an altruistic response. The emotion sympathetically aroused leads us primarily to the removal of the unpleasant state in ourselves rather than in those whose suffering aroused it in us. Thus when we feel sympathetic fear we get ourselves out of danger, often with little regard for the safety of others. When we are unpleasantly affected by the sight of suffering, we pass on and forget it, or else close our eyes to it. By the admixture of *pity* in our response we are sometimes led to remove our unpleasant states by alleviating the suffering of the persons who arouse such states in us. But this type of reaction goes further than mere sympathy itself.[1]

[1] There is present in such cases a strong attitude for overt assistance, and an

There are some sentimental individuals who derive a mawkish satisfaction from sympathizing with every form of misfortune, whether it be real want and suffering or the fancied oppression of some portion of society. These persons revel in sympathy; but they do little to relieve the cause beyond railing at the general scheme of things which makes such conditions possible. Suspicion may be justly aroused that it is the scheme of things which they hate, and their sympathy is simply a form of rationalization for justifying their hatred. A similar tendency is seen in those who release certain repressed interests by sentimentalizing over the criminal. How completely we are made to share the feelings of 'Jimmy Valentine' the burglar famed in song and drama! We sympathize also with those who rebel against social conventions, and who advocate free love and other forms of alleged freedom; not admitting that we ourselves sanction these things, but simply contending that we are persons of 'broad sympathies.' It should be remembered that the fact that we can sympathize with a criminal or a social rebel is in no measure a justification for the conduct of such a person. Sympathy merely obscures the issue and prevents taking the objective social viewpoint necessary for dealing with these cases.

But it would be unfair to leave the impression that sympathy has no really useful social function. Where not indulged for personal satisfactions, but combined with a drive to be of service to others, it is one of the most vital forces of society. Its chief function is to knit us more closely with our fellows by conditioning our behavior not only upon the way in which they react overtly, *but upon the evidences of their thought and feeling.* Through the sympathetic reaction we enter into a fuller understanding of the conscious

accompanying emotion of love. Let us suppose that circumstances or our own selfishness make it impossible to render such assistance. The incipient reactions of help-giving are then blocked at the outset, just as the affectionate habits are thwarted in the grief emotion (see p. 95). This thwarting of course increases the unpleasantness component already present. The emotion felt is a kind of helpless pity. It is introspectively as well as physiologically similar to grief. But if there is some real assistance that we can render, and we are willing to take the trouble, the love component becomes ascendant over the unpleasant helplessness. As we proceed with our work of the Good Samaritan the sad, blocked feeling of pity and the 'lump in the throat' give place to an altruistic love emotion, somewhat pleasurable in quality.

feelings and motives of others. The unity of the group is thus emphasized in the subjective life as well as the behavior of its members. We shall return to this subject in connection with our study of social consciousness.

Summary. We may conclude briefly as follows: (1) Sympathy is not an instinctive process; there is no direct innate effect of the emotion as expressed in one individual upon the emotional response of another. (2) The emotion aroused in the sympathizer is not necessarily a replica of that in the person who affords the stimulus. (3) The emotion aroused in the sympathizer is a part of his own system of emotional habits from past experience, evoked as a conditioned response to some element common to the original and the present situations. (4) Sympathy makes for better understanding in human adjustments, but it is not necessarily conducive either to altruism or to social justice.

Imitation

An Analysis of Acts to which the Term 'Imitation' is Applied. Before the rise of a really critical science of behavior the term 'imitation' enjoyed wide repute in social theory. Tarde, Baldwin, and Ross have given it a basic position in their accounts of human nature and society. Psychologists to-day are fairly well agreed that the term is little more than an inexact expression for the similarities observed in the behavior of different individuals. Explanation for such similarities must be sought at a deeper level. Our treatment of imitation must therefore be mainly negative. In the six following propositions types of behavior sometimes ascribed to imitation will be traced to more fundamental origins.

1. There is little ground for assuming *specific instinctive tendencies* to react to the movements of others by producing similar movements of our own (see p. 76). It is very difficult to induce in a baby under a year and a half old an unequivocal instinctive imitation of a movement or expression.[1] Reactions which at first

[1] Professors McDougall and Preyer have reported the imitation of a limited type of facial grimace in young infants. These findings have not been generally confirmed, and various statements of a contradictory sort appear in the literature. (Cf. Watson's *Psychology from the Standpoint of a Behaviorist*, p. 318; also M. G. Blanton, in the *Psychological Review*, 1917, xxiv, 456–83.)

appear to be due to instinctive imitation are explicable on other grounds.

2. Many acts of alleged instinctive imitation are due to the conditioning of responses by social stimuli similar to the responses themselves. One day while the writer's baby was visiting, the hostess observed him wave his hand aimlessly up and down. She at once drew his attention and waved her hand, at the same time crying 'bye-bye.' The affair interested him greatly, and thereafter he would react either to the sight of a waving hand or to the sound of 'bye-bye' by waving his hand. By one unaccustomed to look for the genetic origin of behavior traits this trick would have doubtless been ascribed to spontaneous and instinctive imitation. It was really due to nothing of the sort, but to a conditioned response in which the conditioning stimulus was an act similar to the response itself. Smiling when others smile is probably due to a similar conditioning process. The whole category of sympathetic reactions, as explained earlier in this chapter, is derived, not through imitation, but through conditioning. The expression of fear in those about us means that we ourselves are in danger; hence we too become afraid. To say however that we *imitate* the fear of others is to state something which is either meaningless or else untrue. The heightened emotionality in crowds is likewise due to conditioning of our emotional reactions rather than to imitation of one individual's behavior by another.

3. Some acts of alleged instinctive imitation are to be explained as conditioned circular responses. In Chapter VIII the parrot-like stage of infantile language was shown to be due, not to instinctive imitation, but to the use of previously established connections between auditory and speech centers. When others speak syllables to the child they put into operation the ear-vocal reflexes which the child has already fixated by hearing himself talk. The sound is thus repeated but not imitated. Crying when other children cry, laughing when the parents laugh, and similar responses are explained in the same manner.

4. Many acts of alleged imitation are due not to the effect of one individual upon another, but to the fact that all are reacting to the

same stimulus. Watching others fight does not cause us to fight also. If we join in, it is not through imitation of the others, but because we are incited through hatred of a common enemy.

5. Imitation is not a method of motor learning; it represents merely a drawing of the attention to some special part of the field of stimulation. The child or animal does not learn to open a box by deliberately copying the movements of another who is opening it. Such movements may serve to direct the efforts of the learner toward some limited and crucial portion of the box, for example, the latch. But within this sphere the only method employed is the trial and chance success, or the deliberate planning, of the individual himself. At a later time the sight of another person opening a box may interest the child and cause him to open it. But this is only after the method of doing it has been acquired by purely individual practice. It is true that in the acquisition of complex habits we can assist our progress by trying to copy the exact positions of the hands or feet of our tutor. Even here however we reach only a rough approach to success; refinement by practice must complete the coördinations approximated by imitation. Such motor copying a'so does not apply to the elementary manipulative tendencies of childhood.

6. There is no *general instinctive drive* to imitate. Behind each complex activity in which one individual copies another there is some personal and prepotent interest other than the mere desire to imitate. One boy follows another over the fence in order to get his share of the farmer's apples. He copies the act of tipping his hat to ladies in order to secure social approval or to make a good impression upon a certain girl. Two of the most common drives of childhood are the effort to be grown up and the compensatory striving for power. Hence boys and girls ape the behavior of their parents, and play imitative family games in order to realize, in imagination at least, the first of these desires. Imitations of policemen, robbers, and engineers help them to attain the coveted feeling of power. Large integrated systems of behavior are thus brought in, not in order to imitate, but simply as means to a certain end. *Given a definite goal to be reached we learn from the behavior of others that a certain type of action will help us to attain it; but the goal itself*

is not established by imitation, nor is the skill necessary for performing the suggested action acquired by that process.

On the whole we may dispense with the conception of imitation in other senses than mere description of uniformities of behavior. The fact that the reaction of one individual resembles that of another is of course of vast social importance. In order to understand these uniformities, however, we must seek for deeper explanations than that afforded by the assuming of a tendency to imitate.

Suggestion

Various Definitions of Suggestion. The term 'suggestion,' like sympathy and imitation, denotes a certain relation of stimulus and response operative between individuals. Like sympathy it will be seen to involve no unique type of process, and like imitation it is a collective term embracing a number of distinct elementary mechanisms. When we accept an opinion uncritically, using it as a basis for our belief or action, we may be said to respond to a suggestion. Thus Professor McDougall considers suggestion as a process resulting in the acceptance of a proposition in the absence of logically adequate grounds. Professor Stern defines it as "the imitative assumption of a mental attitude under the illusion of assuming it spontaneously." Both these statements indicate the relatively unconscious nature of the process; but the latter broadens the notion from a matter of mere belief to a mental 'attitude,' thus implying some action or readiness to act. Professor Baldwin introduces an explanatory element in his definition, and includes, like Stern, a motor factor. He regards the process as a mechanism of attention which narrows the consciousness and motor impulses to restricted lines, and inhibits attitudes of discrimination and selection. It is here justly recognized that suggestion has a negative aspect, namely, the inhibiting of consciousness and action of a nature antagonistic to the suggested proposition. Finally, Münsterberg conceived the process entirely in the behavioristic terms of action and inhibition. A suggestion, according to him, is "a proposition to action which overcomes antagonistic impulses" in the subject. The only criticism one can apply to these definitions is that, while each suggests an important aspect of response

to suggestion, each is too limited to do justice to all the types and phases of the process.

The Potency of Spoken Language in Bodily Control. Before attempting a complete analysis of suggestion, it will be profitable to consider the capabilities of the mechanism through which the suggestion is generally brought to bear, namely, the response of bodily effectors to language stimuli. The spoken word has a more profound effect upon the human organism than is commonly recognized. This effect is shown in two ways: (1) in the automatic and unconscious nature of language controls, and (2) in the far-reaching and complete character of the bodily changes produced.

The first aspect is illustrated by the circular speech reflexes, in which the sound of a word directly stimulates the response of pronouncing it. As adults we unconsciously employ these mechanisms in the reiteration of phrases spoken by others with whose opinions we are in perfect agreement. Echolalia is an abnormal extreme of the same phenomenon. Aphasia presents similar features in that spoken words, which the patient through his disorder has lost all means of understanding, may be written mechanically by him from dictation. 'Psychopathic obedience' is a condition in which the patient immediately executes every action proposed to him. Perfectly normal individuals also show at times an immediate and undeliberated response to commands. These effects are based upon deeply fixed habits of association between word sounds and the bodily movements which they signify. It is convenient to regard them as sub-cortical or 'short-circuited' modes of response, having their centers at a lower level of the nervous system than the portions concerned with thought and meaning. While this explanation is still a hypothesis, it fits well with the description of the suggestion consciousness as an unreasoned and immediate acceptance of a proposal.

The influence of language not only approaches an immediate reflex; it is also remarkably thorough and far reaching. Hypnosis, which is essentially a state of heightened suggestibility, presents the clearest examples. By repeated suggestion the operator gains absolute control of all the mechanisms of the body. The resistance being broken down, the statement "You cannot open your

eyes" takes immediate effect, and the subject actually cannot move his lids. The auditory impulse enters the central nervous system and goes immediately out to the effectors. It is as though one were talking directly to the muscles of the subject. Even perceptual and thought mechanisms may be controlled in deeper hypnotic states. The subject will actually fail to see a person standing nearby if told he has left the room. The flow of tears, and other glandular and visceral changes not even under the control of the subject himself, may be brought about through language suggestion. Among primitive tribes the magic formulæ of the *shaman* have, under conditions of fear, produced wasting illness, and, as some travelers allege, death. Such cases illustrate the profound integration which exists between the afferent mechanism for receiving language stimuli and the entire reaction system of the body. Though shown here in extreme form, the same general organization of neurons underlies the responses to all language suggestion, and gives to the social environment a possibility of the most intricate control of the individual through the spoken word.

Suggestion Defined as a Control of Attitude. This then is the type of physiological effect produced by verbal suggestion. An example of post-hypnotic suggestion will lead us to a still closer view of the normal mechanism. It is suggested under hypnosis that at six o'clock the subject will go to the telephone and call up a certain friend. A motor setting is thus prepared to perform this act at a certain signal, the approach of the hour of six; and when the time comes the subject, though now no longer under hypnosis, automatically performs the act. The motor set thus built up by suggestion we may call an *attitude*. In everyday life attitudes are built up in similar fashion. We talk over with our friend the feasibility of some civic project, or the merits of the new minister; and quite without knowing it we become set to react in accordance with this discussion when suitable occasion arises. We accept the words of 'an expert' on any subject and repeat them to our friends as spontaneously as if they were our own. A suggestion from a friend regarding our appearance, manners, or habits may determine in us a fixed attitude to react in the direction suggested. A refractory child may with tact be talked into an attitude of yielding

graciously to suggestions regarding his conduct. An enemy may often be handled in the same manner. All examples of this sort involve a preparatory setting of the synapses at the motor centers and possibly increases in tonicity of the muscles to be employed in carrying out the line of behavior suggested.

Suggestion is concerned with the control of bodily attitudes in three possible ways. First, it serves to build up or prepare the setting for a definite response when the releasing signal is given. The examples just mentioned belong to this category. Secondly, it may serve as the signal (social stimulus) which releases the attitude already established. And thirdly, suggestion may augment the released response as it is being carried out. These three effects of suggestion will be illustrated in the following sections.

1. **Suggestion in the Formation of Attitudes.** There is a great power in the spoken word; but it is not a magic power. Every normal suggestion builds up its attitude upon some deep-lying reaction tendency already present. Interests, emotions, sentiments, derived drives, and innate prepotent reactions (see Chapter III) serve as bases. A classic example is the jealousy and suspicion of Othello wrought upon by the persistent artifices of Iago until an attitude of infuriated vengeance toward Desdemona was developed. Advertisers notoriously exploit human drives in building up an attitude to purchase their products. Here also *repeated* suggestion is used in the attitude-forming process. Quality, good value, and the satisfaction of every form of human need are associated persistently with the particular trade name.

The following story, at the writer's expense, gives a clear picture of this phase of suggestion. One day the writer joined a rather apathetic audience upon whom an auctioneer of jewelry and silverware was endeavoring to make an impression. Little interest was felt by any of the group until the auctioneer (who knew what he was about) announced that a magnificent manicure outfit which he displayed would be given free to the first person to raise an existing bid to six dollars. A lady at once raised the bid and carried off article and bonus joyfully. At once the writer's economic and bargaining interests were aroused. He drew mechanically nearer, all critical and discriminating tendencies abolished, and his con-

sciousness filled with the realization that things were being given away and that he must bid without restraint upon the very next article. This he did — and carried home for an extreme price a 'nickel silver' sugar bowl which he didn't want! A clearer case of the formation of an attitude for response through suggestion could not be desired.

2. Suggestion in the Release of Attitudes. There are situations in which previous events *have already* given rise to a motor setting, and in which the suggestion serves merely to release the act for which the body is prepared. Persons deprived of loved ones by the late war have developed an attitude of yearning expectancy concerning some future contact with the souls of the dead. Spiritualistic mediums and *ouija* boards have provided suggestions for the release of these tendencies; and an international craze for things 'psychic' has been the result. Yawning when others yawn is not sheer imitation. It occurs principally when we are tired and on the point of yawning ourselves. With this preparation the sight of the act serves as a release of the act in question. We have long standing attitudes of respect and obedience to age, prestige, and expert opinion. Hence any language suggestion from sources of this character liberates the response suggested.

The release of motor settings often involves the principle of allied and antagonistic responses (see p. 37). Suppose one is starting from home on a cloudy morning. The appearance of the sky is a stimulus which tends to evoke the response of getting an umbrella. Thoughts of inconvenience and of the chance that it may *not* rain represent a neural setting of an antagonistic sort, that is, leaving the umbrella behind. A friend suggests that the sky indicates rain, and immediately an allied stimulus is added to the attitude for taking the umbrella, and the antagonistic setting for leaving it is inhibited. The allied stimulus of the suggestion in this case is the deciding factor.

Both the formation and the release of attitudes are illustrated by familiar instances of suggestion. The art of the salesman is to build up a setting to purchase his product in the neuromuscular system of the prospect. When such a setting is developed and strengthened through argument and demonstration, the 'psycho-

logical moment' must be grasped and the contract blank produced or the direct suggestion to purchase delivered. The attitude is therewith released. Professor F. M. Davenport narrates an amusing instance of suggestion comprising these two phases, and vouches for its truth.[1] It is quoted in slightly abridged form below.

In a little town between Cleveland, Tennessee, and Chattanooga, it was the purpose to give a donation to the colored minister. One of the brethren in the church volunteered to make a collection from the various homes, and an old colored woman loaned this brother her cart and a pair of steers for the purpose. After he had been throughout the neighborhood and had secured a load of provisions and clothing, he drove off to Chattanooga and sold everything, including the cart and the steers, pocketed the proceeds and departed on a visit to Atlanta. Consternation and indignation reigned in the community when the affair became known. After some time the culprit drifted back, in deep contrition, but having spent all. Indignation once more arose to a white heat, and it was determined to give him a church trial at once. The meeting was crowded; and the preacher, after stating the charges, announced that the accused would be given a chance to be heard. He went forward and took the place of the preacher on the platform.

"I ain't got nuffin to say fo' myse'f," he began in a penitent voice, "I'se a po' mis'able sinner. But, bredren, so is we all mis'able sinners. An' de good book says we must fergib. How many times, bredren? Till seven times? No, till seventy times seven. An' I ain't sinned no seventy times seven, and I'm jes' go' to sugges' dat we turn dis into a fergibness meetin', an' eberybody in dis great comp'ny dat is willin' to fergib me, come up now, while we sing one of our deah ole hymns, and shake ma hand."

He started one of the powerful revival tunes, and they began to come, first those who hadn't given anything to the donation and were not much interested in the matter, then those who hadn't lost much, and then the others. Finally all had passed before him except one, and she stuck to her seat. "Dar's one po' mis'able sinner lef'," said he, "dat won't fergib." (She was the old lady who had lost the steers.) "Now I sugges' dat we hab a season ob prayer, an' gib dis po' ole sinner one mo' chance." And after they had prayed and sung a hymn, the old lady came up, too!

3. Suggestion in the Increase of Responses already Released. The third effect of suggestion is related to the second. We have just seen that social influences help to discharge motor settings

[1] *Primitive Traits in Religious Revivals*, p. 52 f. Copyright, 1905, Quoted under special arrangement with the publishers, The Macmillan Company, New York.

already prepared, as in going up to shake hands with the forgiven darky and in feeling an emotion of tenderness toward him. After these responses have been set off they may be *intensified* by a continuance of the same social stimuli that brought them about. Thus one would go forward *more quickly*, and his emotion would reach a *higher pitch*, because he continued to see others doing the same act. The social stimulus thus serves as a suggestion not only for releasing the reaction but for augmenting it as it is being carried out. In both cases it serves as an allied stimulus and is contributory (see p. 37) to a motor setting already existing. The term *social facilitation* may be used to include both these effects (releasing and intensifying)

In the old-fashioned religious revival we find all three effects of suggestion upon attitude and response. First, through the preaching of 'hell fire' and 'conviction of sin,' the attitude of penitence is built up. Secondly, this setting is released by the invitation-hymn and the call to come forward. And thirdly, the acts bespeaking self-surrender and the cries of religious ecstasy from others increase the ardor of the emotional reaction of each convert. Situations of this sort will be more closely analyzed in the two following chapters. It is sufficient here to recognize them as forms of response to suggestion.

Conditioned Response in Suggestion. In the story of the penitent negro the singing of the revival hymn operated as a suggestion to come forward. This was because the members of the congregation had so often before heard it while they were coming forward or watching others do so. Many suggestions not involving language are based on the same principle, namely, the use of acts and objects usually accompanying a response as conditioning stimuli for bringing about the response at the will of the suggester. Boys, for example, enjoy the prank of sucking a lemon in front of the trombone player in a band in order to harass his performance by the conditioned puckerings of his mouth. The eccentric who goes hatless and gloveless in zero weather probably derives satisfaction in the knowledge that his habits are causing others to shiver. Hurrying to complete his lecture at the close of the hour, the professor is often distracted by the youth who leans forward

and sits on the edge of his seat in order to produce a conditioning suggestion for bringing the remarks to a close.

The Conditions of Suggestibility. The main conditions favoring suggestion, like those for sympathy, represent the 'openness' of the organism to the stimulating suggestion, and are based, in particular, upon an attitude of submissiveness toward the suggester. High self-expression in personality traits, physical strength, superior social position, and prestige through power or knowledge place their possessors in an ascendant relation to those with whom they come in contact, thus giving their behavior a suggestive influence. Sex is sometimes a determinant of a suggestible attitude, females usually standing in the submissive rôle toward males, and hence susceptible to suggestions from them. Difference of age is also a strong factor in responsiveness to suggestion. Since most of the child's knowledge comes from his elders, and also because he feels his physical weakness before them, he has formed the attitude of accepting all their suggestions without question. Where, as in childish ignorance, conviction is based entirely upon the authority of the speaker, suggestion shades imperceptibly into simple belief. Poverty of ideas and extreme submissiveness are thus the causes of the notorious suggestibility of childhood.[1]

A situation which speedily places one in an attitude of submissive suggestibility is the presence of a group, or indeed the mere allusion to large numbers. We bow before the will of the majority. We rise irresistibly when the congregation rises, clap when the audience claps, and express disapproval in unison with the throng. Adherence to style and custom is based in part upon the attitude of submission to suggestion from great numbers. The mere fact of *being in a crowd* places one in this setting, and so prepares for the release of specific actions suggested by the behavior of the others.

Advertisers play freely upon suggestibility toward both prestige and large numbers. Placards announce that a certain remedy is endorsed by *eminent physicians* (a picture representing one of them often accompanies), or that *thousands* have been cured by it and

[1] The same considerations apply to the unusual suggestibility of ignorant adults, and to the widespread belief in the Middle Ages in miraculous events backed by the authority of the clergy.

are ready to extol its virtues. Professor H. T. Moore has measured the susceptibility of individuals to these forms of suggestion by having them pass judgment upon the seriousness of grammatical errors and moral faults, and upon the æsthetic value of musical cadences. A set of judgments was first obtained without any suggestive influence; and another set was taken later after telling the subjects (1) the opinion of the majority and (2) the opinion of 'experts' in regard to each of the items to be evaluated. The tendency to change their previous judgments to accord with the majority opinion on speech and morals was found to be almost five times as great as the change which might be expected by mere chance. The effect of suggestion in the case of expert opinion was slightly less, but still substantially large, the subjects altering almost half of their former judgments which were at variance with the stated opinion of experts.[1]

The two extremes in susceptibility to suggestion are represented by the hypnotized person, who is absolutely submissive and responsive to the command of the operator, and the *negatively suggestible* person who is so thoroughly on his guard against yielding that he believes or acts in the manner opposite from that suggested. This is not mere passing stubbornness, but a trait of personality. It is a resistance against domination by the social environment, and is so strong that some persons of this type will not admit seeing the ordinary optical illusions, because they do not wish to be tricked by a clever draughtsman or a joking friend. A temporary period of negative suggestibility occurs at the age of two or three years. It marks the transition from helpless infancy to assertive childhood.

To complete our account we may mention a number of devices and special conditions for rendering suggestions effective. 1. It is useful closely to concentrate the subject's attention by instruction or artifice so that the suggested proposal alone is received

[1] The effect of both classes of suggestion upon judgments of musical preference was much lower. Evidently we are most susceptible to social influences in regard to matters which are likely to affect our social standing, as in this case, our speech and conduct. In regard to standards of language the majority opinion was found to have somewhat more weight than that of experts. See reference at the end of this chapter.

2. Monotony and rhythm, as in the chants of the medicine man or the passes of the hypnotist, relax and soothe the subject, and place him in a drowsy state of non-resistance. 3. Indirect suggestion takes the recipient off guard by avoiding the direct issue at first until a suitable attitude can be prepared for its acceptance. This method was employed in the story of the negro penitent. 4. A similar distraction of attention is produced by the interesting motions made by the conjurer with his right hand while his left unobtrusively performs the trick. 5. Fatigue and intoxicants sometimes increase suggestibility. 6. It is important, finally, to word a suggestion in a positive rather than a negative manner. We have no response attitude for "thou shalt not"; therefore we often translate the phrase for purposes of action into "thou shalt." The skilled publicity agent never prints the slogan that "the cause cannot fail." He assures the public instead that "the cause is *certain to succeed!*"

Final Definition of Suggestion. Throughout the preceding discussion we have spoken of 'response to suggestion' rather than of suggestion as a form of response in itself. There are two senses in which the word may be used: namely, as stimulus, and as the behavior process of the response. The former use is rather more distinctive than the latter. 'A suggestion' is always a very definite thing; whereas the *process* of suggestion contains little that is unique. The attitude, for instance, of the runner crouching on the mark, and the release as he springs forward at the pistol shot, differ in no essential way from the physiological processes operative in cases that we would more appropriately term 'suggestion.' It might be stated that the suggestion process is characteristically, though not invariably, a response to a *social* form of stimulation, and that it implies a relation of ascendance and submission, that is, the control of one person by another (cf. Münsterberg's definition). If we add that the neural pathways used are more immediate and less accompanied by thought consciousness than in other responses to language, the picture is fairly complete. The following somewhat cumbersome definition will serve to summarize the nature of suggestion, both as process and as stimulus.

Suggestion is a process involving elementary behavior mechanisms

in response to a social stimulus; the nature of the process being that the one who gives the stimulus controls the behavior and consciousness of the recipient in an immediate manner, relatively uninfluenced by thought, and through the method of building up motor attitudes, releasing them, or augmenting the released response as it is being carried out. 'A suggestion' is a social stimulus producing the effect just described.

Laughter

Genetic Origin of Laughter. The Incongruous. Laughter, which is preëminently a response to social stimulation, has been a subject of speculation among philosophers of all ages. The greatest obstacle to a satisfactory explanation has been that, unlike other basic forms of behavior, laughing does not serve any known biological purpose. Another drawback has been that scientists have attempted to explain the full-fledged humor of the adult as a kind of innate quality without going back to its beginnings in infancy. The genetic approach is the soundest one, for children are the greatest laughers. In later years their free and boisterous humor becomes restrained and 'intellectualized' into the witticism and the satire.

The elemental joke consists in being tickled. Laughter is the innate response to the stimulation of the sensitive or ticklish zones of the body (see p. 67). While the act of laughing is inborn, the range of things that come to be *laughed at* is extended by experience (p. 68). Let us trace this expansion of the sense of humor in some of its details.

The most obvious thing about tickling is that it represents a great fuss about nothing. It is the light touches and pokes that evoke laughter. But it is also true that the ticklish zones overlie some of the most vital organs of the body. Hence there is something terrible in a thrust at these parts which throws into relief the antagonistic pleasant emotion aroused by the playful outcome of the thrust. The tickler moreover does not miss the opportunity of making the feint as sudden and terrifying as possible in order to get the heartiest peal of laughter from the child when the latter finds he is only being tickled. This is precisely the situation in

numerous funny events of daily life. There is a sudden passage from a strained expectancy to nothingness (Kant's theory of humor), or else a rapid shift from bigness, weight, or seriousness to the small and inconsequential (Lipps). It is the humorous passage from the sublime to the ridiculous. Fun of this type is common on the stage and in the circus. The acrobat takes a running leap and somersaults over four horses. The clown then runs down the platform in swaggering imitation, but suddenly stops and brushes a fly from the nearest horse.

Not only is the transition effected between contrasting and incongruous situations; it is also a *sudden* transition. Suddenness, physiologically considered, means the abrupt change from one type of attitude to another. The tickled baby passes from a reaction of withdrawal and alarm to one of mirth and laughter as the playfulness of the attack is felt. And it is also a sudden passage, for the tickler makes his movements very rapidly. It is no idle metaphor, therefore, which describes more mature humor as 'poking fun,' and speaks of the 'thrust,' the 'dig,' and the 'sally of wit.' Though carried out by the thought mechanism, rather than *via* the ribs, the fundamental attitudes assumed are essentially the same as the infant's, and are probably to be explained as developments of the latter. The mechanism involved is similar to that of mimetic facial expression (see p. 217). Whenever, therefore, the events of life lead to a quick and complete change of motor setting, providing the setting changed to is not a vital one like fear or rage, a laugh is likely to be the form of release. This is the humor of the incongruous. It represents a generic type, of which the transition from the important to the trivial is a single species.

A good joke usually has a point, that is, an incident in the narrative or action where the sudden change of setting occurs that is released in laughter. It is generally led up to by a strain of expectancy. It is important not to give away the point before the proper moment, for then the attitude of the serious or sublime will not be sufficiently established for the sudden shift, or incongruity, to be keenly felt. This fact should be borne in mind by those who make their point first and then try to illustrate it with a joke, and by the dismal professor who forgets that he has told the story to the same

class before. The elementary aspect is represented by the fact that one cannot tickle his own ribs. He 'gives away the point' because he knows (1) that he is going to tickle and not gouge, and (2) that he is going to do it at a certain moment. There is thus neither suddenness nor change of attitude. An example of a jest giving the sudden twist that shifts our attitude is as follows. A philosophic old colored barber made the following observation to a new patron:

"Yo' has a large head, suh. It's a good thing to have a large head, fo' a large head means a large brain, an' a large brain is de most useful thing a man kin have, fo' it nourishes de roots of de hair." [1]

Other laughable situations do not lead up to a definite point, but present the two sides of the case simultaneously. We thus experience a rapid alternation between the opposed attitudes. The writer remembers laughing uproariously with his college mates over the imagined situation of the dignified President of the college rolling aimlessly about the floor. The practical joke, such as causing a pompous gentleman to sit on his hat or slip on a banana peel, evokes the same contrast of attitude by simultaneous elements of the situation. In these instances our response to the usual dignity of the person alternates quickly with the opposite response to his present undignified position. The neatness of caricature and mimicry divert us by the same principle.

Another phase of incongruity is that lying between pleasure and pain. We must remember that the ticklish zones, if more vigorously plied, yield emotions of an unpleasant sort. Situations, likewise, in daily life lie on the border-line between tragedy and comedy. The small boy sometimes manages to release the pain of a stubbed toe through laughter instead of crying. Laughter is thus a release which may be used instead of a painfully toned emotional response, thereby making human life more tolerable. In the words of Lord Byron:

"If I laugh at any mortal thing
'Tis that I may not weep."

[1] From an article, "Laughter, A Glory in Sanity," by R. Carpenter. *American Journal of Psychology*, 1922, XXXIII, 419–22.

Professor McDougall finds this release especially effective as an 'antidote' for primitive sympathetic pain, and bases upon it an attempt to explain all instances of laughter.

One more sequel of the infantile tickle reaction remains to be traced. The child is passive in the affair; he is acted upon by the tickler. Likewise, in experiencing jokes, the adult must be submissive. He must lay himself open to being tickled. If one adopts a critical or analytical attitude or otherwise asserts himself in listening to a joke, it will probably fail to strike him as funny. We must be willing to follow along with the story, accepting, if need be, the incredible or absurd, merely for the sake of the game. We must, in short, assume the *play attitude*, whether in the childish banter of tickling assaults or in the refined raillery of grown-ups.

Up to this point we have tried to show that the foundations of humor may be traced to the infantile response to sensitive zone stimulation; and that the *range of the laughable* increases with experience by carrying over the bodily settings for sudden, incongruous, play-like reactions from the original tickle encounter to analogous situations of mature life.

Laughter as a Release of Inhibited Emotion. Freudian Wit. Another modern theory of laughter, now fairly well known, is that of Dr. Sigmund Freud. Before discussing it let us consider a special case of emotional behavior. If a child for the first time sees a false-face on a playmate, he may show signs of hesitation bordering on fear. As soon as the trick is discovered he is struck by the incongruity (his old friend with a new and marvelous physiognomy), and he bursts into laughter. This response is however due, not to the incongruous setting alone, but to the release through a new channel of the effects of a stimulus which previously had produced a fear reaction. The fearful state represented a blocking of action because the situation was wholly unfamiliar; but now a somatic outlet is obtained through the antagonistic and pleasant side of the emotional mechanism (see Chapter IV).[1] The elementary re-

[1] Dr. Crile explains laughter in the following manner. We are rendered angry or terrified; but our usual reaction of attack or flight is suddenly thwarted by finding it all a joke. Nature must now find some way of liberating in action the energy stored up as a part of the emotional reaction (adrenal effects, etc.) Laughter affords this release, reduces the tensions, and restores the energy balance to normal. The physiological principle of this theory appears both sound and suggestive.

sponse to tickling thus fulfills a distinct biological purpose in the release of inhibited emotional pressure.

This is the physiological aspect of Freud's theory of the comic, though Freud himself neither recognizes nor understands such mechanisms. If we keep these facts in mind we shall be repaid with a fuller understanding of the contributions of Freud's brilliant but rather narrow genius. His theory explains the bulk of human wit as due to the sudden release of suppressed impulses from the 'unconscious.' These impulses, which have chiefly to do with our hostilities and our sex attitudes, are usually held in restraint through good breeding and habits of respect for custom and the opinion of others. A joke gives us an opportunity of releasing in a laugh such inhibited tendencies; because, as we assure ourselves, no one can blame us if it is all in fun. If, for example, we have some grudge against the dignified gentleman who steps on a banana peeling, or if we dislike his pompousness, this dislike, which we might otherwise feel obliged to conceal, is now released in a laugh, the very force of which often startles us. As in the case of the child's laughter at the false-face, an inhibited emotional tendency finds release in a laugh. Inhibited feelings of contempt, superiority, and envy toward certain associates are often betrayed in this fashion.

A corollary of the Freudian theory is that, unless there is some repression present in the listener, the joke will not carry its point. In many instances this is true. Jokes on Christian Science are usually not funny to the Christian Scientist, because he has no repressed contempt or incredulity in regard to that faith. A sexual joke, if not too open, appeals to nearly every one; for all of us must put some restraint upon our sex impulses. A joke may sometimes be interpreted in various ways by different people according to their inhibited tendencies. It is thus everybody's joke on everybody else. A young man who was a Jew once told the writer the following story which he (the Jew) thought was an immensely humorous dig at the Roman Catholics. A Jewish boy and an Irish boy were disputing as to the merits of their respective religious leaders. "Our Priest knows more than your Rabbi," said the Irish lad. "He ought to," replied the Jewish boy contemptuously, "you tell him everything!" The young man who told this story had his mind filled with the

delightful incongruity of the (supposedly) learned priest receiving all his instruction from ignorant boys; and it was very funny to *him*. The Catholic, on the other hand, will readily recognize in the jest an allusion to confession and a thrust at the Jew through exhibiting his shrewdness and his contempt for those who would let slip information to their own disadvantage. And so the story is funny for him, too. It is, in short, a joke with two handles.

It is easily possible to overdo Freud's theory; for many instances of humor are based upon pure incongruity or upon kindly banter. Since many of the situations releasing hostile or sexual attitudes are those in which persons get themselves into incongruous and inconsistent positions, the Freudian release really makes use of an incongruity laugh already on its way. Release of inhibited emotion thus adds fuel to the fire of our tickled laughter.

Laughter is a Social Phenomenon. Laughing is uniquely a response to social stimulations. Animals and things occasionally amuse us, but only because we endow them with human characteristics. In a general sense we laugh only at people. Incongruities arise chiefly through inconsistency with feelings, actions, and personality, in short through the living and human. A large rock and a small one side by side impress us with a sense of contrast; but the tall man and the short man in the circus fill us with the indefinable humor of the incongruous. In the original tickle situation it was always a *person* who tickled us; and so our laughter has become conditioned entirely through human stimulation. The writer doubts that a 'tickling machine,' were one invented, would have much success. An element of caprice, or unaccountability, peculiar to the human humor-object alone, affords the necessary suddenness for our shift of attitude. Human beings are necessary also as objects of the Freudian laugh, in that our emotional responses come to be centered chiefly in persons; and toward humans only do we feel the obligation to curb the full expression of these impulses. Laughter is thus a kind of institution rooted in society itself.

We not only laugh exclusively *at* people, we laugh also *with* them. The social environment is necessary in the rôle of a *contributory* as well as a *direct* stimulus for our mirthful response. One who laughs often to himself is considered eccentric. The solemn face

of a man sitting alone and perusing a comic paper is in itself a matter of humor. We may chuckle a little as we read good jokes; but we do not laugh outright unless a friend hands us the item or tells it to us so that we can laugh with him. There is, in other words, a definite facilitating stimulus in the sound of another's laugh. This sound helps to release and augment our own laughter response once we have been brought almost to the point of laughing through the comic story itself.[1] The laughter of others thus operates as a suggestion according to a process described earlier in this chapter. When we hear a good joke we wish to tell it to some one else to secure the pleasure of another hearty laugh. Although the joke is now old to us we keep on laughing at it so long as there is anybody to laugh with. This is why we do not tire of our own jokes. Another instance is the way a man behaves when one tells him a funny thing that happened in a crowd or a classroom. He usually asks how the crowd took it; and if the reply is that "they roared," his own merriment is redoubled.

It would follow from all this that laughter is directly proportional to the size of the group. And this is true provided the jest is broad enough to touch the inhibited complexes of all. The word 'broad' is judiciously used, for it is generally the sexual joke which is of this type. Another factor is that in the large group there seems to be more justification for 'letting one's self out'; for all the rest are doing it, and so it must be all right. Men and women in a theater audience will laugh boisterously at salacious jokes which, were they in small mixed groups, would cause them mortal embarrassment. A certain professor had to give up the use of the word 'chicken' in his large classes because of the uproar it invariably caused, no matter how innocent the context. In smaller classes the word scarcely evoked more than an isolated snicker speedily suppressed; but in the large groups the professor was obliged to substitute the euphemism, 'domestic fowl.' There appear, then, three causes which underlie the hilarity of the crowd: the large volume of stimuli facilitating to laughter present; the release of a common restrained impulse; and the feeling of moral sanction for its release.

[1] This stimulating value probably arises through the fixation of circularly conditioned responses to the sound of one's own laughter in infancy. (Cf. p. 182.)

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CHAPTER XI

RESPONSE TO SOCIAL STIMULATION IN THE GROUP

The More Complex Social Situations. The forms of reaction described in the preceding chapter are the elementary responses which individuals make to one another. We now advance to the complex groupings in which those mechanisms are to be found at work. The pattern of social conditions in daily life is intricate. It involves varying numbers and arrangements of persons, attitudes of individuals toward one another, relations of personalities, and types of occupation or experience in which the various individuals share. Our present task is to trace the effect of these conditions upon the social behavior of the individual.

Two types of aggregation may be distinguished: the *group* and the *crowd*. The distinction between them is not sharply drawn, and one form is capable of passing into the other. For convenience, however, we may define a group as any aggregate consisting of two or more persons who are assembled to perform some task, to deliberate upon some proposal or topic of interest, or to share some affective experience of common appeal.[1] Groups may be organized or unorganized. The crowd we shall distinguish from such formations by the presence of emotional excitement and the replacing of the deliberate group activities by drives of the more primitive and prepotent level.

Groups, in turn, may be classified under two heads: *co-acting* groups and *face-to-face* groups. In the former the individuals are primarily occupied with some stimulus other than one another. The social stimuli in operation are therefore merely *contributory*. Pupils in a classroom reading a lesson in concert from the blackboard illustrate this type of group. In the face-to-face group,

[1] The word 'group' is sometimes used in a sociological sense to denote a collection of individuals, not assembled in one another's presence, but joined by some common bond of interest or sympathy. In so far as the behavior of individuals in such groups may be termed social it has its original basis in the actual contacts described in this and the following chapters.

which is necessarily small, the individuals react mainly or entirely to one another. A committee of three or four directors discussing a business project is a group of this sort. The social stimulations in effect are of the *direct* order. Many groups, of course, combine the direct and contributory social influences, and are thus neither exclusively co-acting nor face-to-face. In the present chapter will be considered the behavior of the individual in response to stimulations from these two kinds of groups.

Influence of the Co-Acting Group

Social Facilitation: The Influence of the Group upon the Individual's Movements. In Chapter X there was described, under the general topic of suggestion, a two-fold effect of social stimulation in (1) releasing reactions for which the subject is in readiness, and (2) increasing these reactions once they have been initiated. This is precisely the effect of the co-acting group upon its members. The action prepared or in progress is some response participated in by all, and the social stimuli releasing or augmenting such response are *the sight and sound of others doing the same thing.*

A number of simple phenomena illustrate this law. It has been found that in lifting loads (weights of an ergograph) by bending the finger, the 'maximum' weight that the subjects can lift while watching the similar movements of the experimenter's finger is greater than the maximum that can be lifted when the signal to lift is merely the beat of a metronome. In ergographic work and dynamometric tests of hand grip a better score is made when working with others than when working alone. Again, if one holds his hand in readiness for movement upon a freely moving writing board and attends to the hand of another while the latter traces curved designs, his own hand will follow automatically, producing similar tracings.

The most striking instances of social facilitation are to be found on the race track. It is a common maxim among bicyclists that, provided two riders are of equal ability, the one who starts out ahead and keeps ahead throughout most of the race will lose in the end. This is because the sight of his movements have afforded so great a contributory stimulus to the man behind that the latter's

energy is materially increased and he is enabled to win. There is thus a 'competition for loafing' until the final spurt, each contestant striving to make his opponent pace him. Races paced by a faster multicycle are sometimes run in twenty-five per cent less time than those where competition alone is the spur. The well-known effect of pacing in horse races is similar. An experiment was performed by Professor Triplett[1] in which forty children were tested, in a number of trials each, for their speed in turning fishing reels.

One half the trials were performed by the child alone, and one half in competition with another child. Although the instruction *in each case* was to "go as rapidly as possible so as to make a record" many of the subjects were able to exceed in their work in pairs the records they established as their maximum while working alone. Through the auditory sense as well as the visual, the performance of others increases that of the subject. Triplett found that children could be made to count at a faster rate by 'pacing' them; that is, by having the experimenter count at a faster rate than the child's maximum for five seconds just preceding the trial of the child himself.

In all kinds of competitive performance we may recognize two social factors. The first is *social facilitation*, which consists of an increase of response merely from the sight or sound of others making the same movements. The second is *rivalry*, an emotional reinforcement of movement accompanied by the consciousness of a desire to win. Although the effects of the two are difficult to distinguish, they are in reality distinct factors in the total response. That social facilitation may exist independently of rivalry is seen in such instances as paced running and the ergographic experiments, in which rivalry was fairly eliminated by the setting. Though these two factors are naturally supplementary, we shall try for the sake of clearness to separate them in the following discussions.

The Influence of the Group upon Attention and Mental Work. The pioneer investigation of the social influence by the method of comparing the individual's mental work in the group with his performance when working alone was carried out by Dr. August Mayer

[1] Reference at the end of this chapter.

in 1903. His subjects were fourteen boys from the *Volkschule* of Würzburg, Germany. Their average age was twelve years. Five types of test were selected as means of measuring reasoning, memory, and imagination. The tests involved writing from dictation, mental arithmetic, written arithmetic, learning nonsense syllables, and completing written sentences by supplying verbs which had been omitted. Five pairs of tests were used, one test in each pair being given in the classroom to all fourteen boys working simultaneously, and the other to each boy separately. No attempt was made to eliminate rivalry.[1] Three types of instruction were used in the various tests. The first was, "You are to finish as quickly and yet do your work as well as you possibly can"; the second, "Go slowly but very *carefully*"; and the third, "Be as quick as you can — quality does not count."

[Throughout this chapter the following terms will be used to express various phases of the social influence upon work. 'Social increment' will be used to indicate a gain in the average quantity of work done in the group over the average done alone. 'Social decrement' will denote a loss in quantity of work done in the group. Corresponding gains or losses in the *quality* of the work done in the group compared with the quality of that done alone will be termed 'social supervaluents' and 'subvaluents,' respectively.]

Under the instruction 'quickly but well,' which is the most natural and effective attitude for work, there was found a substantial social increment, amounting in some cases to from 30 to 50 per cent of the score made when working alone. There was also a social supervaluent; that is, there were fewer errors in the group performance than in the work done by the subjects when isolated. Another interesting result was the greater uniformity of the work of individuals when under the group condition. Working in the group produced a lower average deviation among the scores of the workers than did solitary work. The work of a single individual was also more constant under the social condition. Mayer speaks of this phenomenon as the 'uniform tendency' of group work.

[1] The experimental situation in fact encouraged rivalry. Each subject was allowed to finish his test, and his time was then taken. The fact that some were finishing and ceasing their work before others was doubtless a spur to the competition of the remaining workers.

We thus find that social facilitation (sight and sounds of others working) combined with rivalry produces a distinct increase in the quantity and quality of the product of the individuals. In bringing the attainment of each more nearly to his maximum the social influence also brought them all more nearly to a common level. While working alone differences of energy, industry, and other traits produce wide deviations among individuals, deviations which are reduced when the common incitements of facilitation and rivalry are brought to bear.

Under the instruction 'slowly but carefully' the effect of the words was again reinforced by the social influence. That is, there was a social decrement (loss in speed), but a social supervaluent (gain in accuracy). When directed to work as 'quickly as possible without regard for quality,' there was a gain neither in the quantity nor the quality: only 40 per cent of the test pairs showed a social increment, as compared with 50 per cent which might have been expected by chance. This latter result is probably to be explained as follows. Social facilitation and rivalry were of themselves sufficient to bring the speed of performance almost to its maximum, so that the added verbal instruction to hurry brought about an over-stimulation. The result was a loss of muscular control. Over-stimulation through rivalry alone, a similar phenomenon, will be discussed presently.

In 1904 Dr. F. Schmidt published an account comparing the performance of children's tasks done at home with equivalent work done in the schoolroom. The work assigned included writing exercises, written arithmetic, and German composition. No measure of speed of work was obtainable for the home work, but certain comparisons of quality were made. It is fair to assume that the home work represents the solitary condition of working. There was found a distinct supervaluent for the work done together (that is, in the schoolroom).[1] A few individuals, however, did

[1] More recent experiments tend to show that inferior performance is not the *necessary* outcome of assigning tasks for home work. Under proper direction work done out of school can be made as effective as work done in the classroom. It seems however that special devices must be used to offset the disadvantage of the lack of stimulation from the group. This is a problem which belongs rather to educational than to social psychology. See Heck, W. H., "Comparative Tests of Home Work and School Work," *Journal of Educational Psychology*, 1919, x, 153–62.

better at home. One group of subjects made 270 errors at home, and 184 at school. Schmidt found that *omitted* letters and words were characteristic of the home performance, while more *superfluous* letters and words were found in the exercises written at school. This seems to be another evidence of the heightened discharge of motor impulses under conditions of stimulation by the presence and similar movements of one's fellows. Periods of distraction, during which the errors were made, were in group work filled with impulsion to write on, thus producing the superfluous or 'group' type of mistake.

Professor Meumann (1904) carried on experiments, similar to those of Mayer, upon rote memory for words. Lists of disyllabic words, ranging from four to twelve words in number, were read aloud; and the subjects immediately afterward wrote down all the words they could remember. A significant age difference was found in the social increment. Children eight and nine years of age remembered more when tested in the group than when tested alone; while subjects thirteen and fourteen years of age were little affected by the social condition.

In the years 1916–1919 the writer conducted a series of experiments in the Harvard Psychological Laboratory comparable to those already described, but with the following differences of method. Instead of children the writer used as subjects adult graduate students, their average age being twenty-five. Both sexes were included. The work done together was performed in groups of four or five, seated around a table. In the solitary tasks the subjects all worked at the same time, but each in a separate room, the time signals being given by buzzers located in the various rooms. The two conditions T and A[1] were alternated in successive tests in such a way that the effects of practice, adaptation, and fatigue were equalized between them. An attempt also was made to eliminate rivalry, or at least to reduce it to its natural minimum, so that the pure effects of social facilitation could be measured. Several expedients were used for this purpose: First, a constant amount of time was given for each test; and the subject's speed was determined by the amount of the test completed. Hence no

[1] That is, *together* and *alone*.

subject finished before the others. All comparisons of achievement and discussion of results were prohibited. Finally, it was emphasized that the test was in no way a competition, and that the records of the subjects would not be compared. All, however, were instructed to work in each test at their maximum speed consistent with accuracy. The subjects while working in the group were made aware that each was doing the same task as all the others.

A variety of mental functions was tested in these experiments. In this section will be described only the tests and results in the fields of attention and mental work. Three types of test were used for this purpose as follows:

(1) Vowel Cancellation Test. Columns of newspaper material were placed before the subjects, and they were instructed to cross out all the vowels, working as rapidly as possible.

(2) Reversible Perspective Test of Attention. A twelve-inch figure, similar to that in Figure 23, was placed before the group (seated side by side), or before each subject in the solitary tests. In one set of tests the instruction was given to look first along the line *bd*, and try to see the face *abcd* as nearer than the face *efgh;* and as soon as this was done to look at *eg*, and try to bring the face *efgh* nearer. When the control of the reversals was obtained, the subjects were required to perceive these two perspectives alternately, making as many of the reversals as they could in one minute. Their report of the number of reversals obtained served as a measure of the *speed factor* of attention, corresponding to the *amount* of mental work done in the given time. In another series the instructions required the subjects to fixate the dot in the center of the figure as steadfastly as possible and try to keep the perspective from changing. Since the reversals are due mainly to eye movements, perfect fixation practically eliminates them. The number of changes occurring in spite of the effort to fixate was therefore used as a measure of the *constancy* of attention, or the aspect of

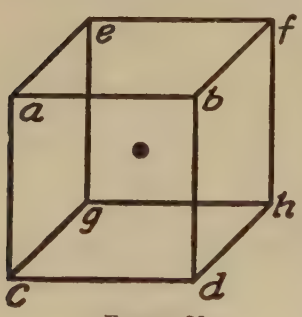

FIGURE 23

attention concerned with *accuracy* or freedom from lapses in mental work. Two separate experiments were conducted with this test. In the first the data were secured from 7 subjects who were given 10 trials alone and 20 trials in the group. The second experiment employed 15 subjects, each of whom had at least 30 trials alone and 30 in the group.

(3) Multiplication Test. Horizontal rows of problems in multiplication were arranged on sheets, with ten problems in each row. Each problem consisted of the multiplication of a two-digit number by another two-digit number. At the signal the subject began at the left end of the row and performed as many of the problems as possible in one minute. Speed of the process was measured by the number of problems or part problems multiplied; constancy of attention by the freedom of the work from errors. Fifteen subjects were used, each of whom had approximately 30 tests alone and 30 in the group.

The main results of this investigation are summarized in Table VIII. The social increments, decrements, super-, and subvaluents in this table are based upon the average scores of individuals in tests given under the two social conditions, respectively.

The table shows that the presence of the co-working group tends to increase the quantity of work done by the individual members, but leaves the quality practically unaffected. In both vowel crossing and the two experiments with reversible perspective 71 per cent of the subjects affected by the group have a social increment in their work. The percentage for multiplying, though not so high, is also significant (66 per cent). The individual records (not shown in the table) furthermore indicated that the increments of those who did more work in the group were considerably larger than the decrements of those whose performance was greater alone.

The constant character of these results suggests that, for mental work involving close attention: (1) most individuals work at higher speed when stimulated by co-workers, and (2) a few individuals, on the contrary, are retarded by the social influence. These latter form a distinct type.

Turning now to the qualitative aspect, it might be inferred that, since the individuals having social supervaluents and subvaluents

are about equal in number, group stimuli produce little effect upon the quality of individual work. This impression is incorrect; for while some subjects were little influenced by the group in their

TABLE VIII. INFLUENCE OF THE CO-WORKING GROUP UPON ATTENTION AND MENTAL WORK

TEST USED	SPEED (QUANTITY) Indicated by number of vowels crossed, reversals of perspective produced, or problems multiplied			CONSTANCY OF ATTENTION (QUALITY) Indicated by number of reversals occurring with effort to fixate, or number of errors made in multiplying		
	No. of subjects doing more work *alone*	No. of subjects doing more work *together*	No. of subjects doing equal work together and alone	No. of subjects having greater constancy *alone*	No. of subjects having greater constancy *together*	No. of subjects having equal constancy together and alone
Crossing Vowels	2	5	0	Not recorded		
Reversible Perspective (1st exp.)	2	5	0	3	3	0
Reversible Perspective (2d exp.)	4	10	1	6	6	3
Multiplying	4	8	0	7	8	0

Note: Under *Constancy of Attention* in *Reversible Perspective, 1st exp.*, the record of one subject was omitted owing to eye strain. Under *Speed* in the *Multiplying test* three subjects' records were discarded because of continued practice effect which obscured the results.

quality score, others showed marked increase or decrease. Introspective reports indicated the presence of conflicting influences. There was felt the urge toward greater speed and accuracy (facilitation) because of the activity of the others; but there was also dis-

traction through noise and emotional factors. In some individuals the facilitating influences outweighed the distracting, producing a social supervaluent; in others the distracting effects were stronger (social subvaluent). The subvaluents of the latter class were, on the whole, greater than the supervaluents of the former. One subject, rather asocial in habits, made 39 errors in his solitary multiplication, and 100 while working in the group. Judging from these considerations the advantage for quality of performance seems to be upon the side of the solitary condition.[1]

It is not difficult to understand why stimuli from the group should have a favorable effect upon the amount but not upon the quality of work. 'Amount' represents speed of movement; whereas 'quality' is determined, strictly speaking, not by movement at all, but by that fixity of the attention process which prevents any lapse or error. Our study of social facilitation has in all cases shown it to be a release or augmentation of some form of movement. The social stimuli reinforcing movement are more effective than those suggesting constancy of attention.

The distribution of the errors throughout the multiplication tests is significant for interpreting the distracting influence of the group. In the social setting the errors tended to be bunched together in successive problems of the test, while in solitary work they were more widely distributed. The index computed to express this tendency of the errors to be closely grouped we may call the *cumulative error score*. This score was larger in the group work of 10 subjects, and larger in the solitary work of only 3.[2] Distractions are stronger in the presence of co-workers, and lapses of attention involving errors are correspondingly lengthened. An emotional factor is also significant here. Probably many of the errors made were recognized, though both lack of time and the instructions forbade their correction. It is likely also that the subject was conscious that others were probably solving the problem correctly and that his own performance was therefore inferior to that of his fellows. In consequence the recovery of composure was delayed

[1] The gross total of errors of all subjects supports this view. There were 583 errors made in group work as compared with 571 in work done alone.

[2] It was equal in T and A in two cases.

and further mistakes made in problems immediately following. This interpretation, if correct, points to a deep-lying tendency to estimate one's own performance in relation to standards set by the group, and to be confused by comparisons which are unfavorable to one's self.

The Influence of the Group upon Association. The effect of stimulation from co-workers upon the free flow of associated word responses was studied by the writer in the following manner. The subjects in the two conditions, T and A, were given sheets of paper ruled with vertical columns on which to write successive words as rapidly as they came to mind. At the expiration of the first and second minutes (in some of the tests) a signal was given, and the subjects indicated by a line the last word written at that instant. At the end of three minutes the test was terminated. Immediately after each test the subjects were required to underscore on their papers all *personal* (*ego-centric*) *associations*, that is, all words derived from some definite personal experience of the individual concerned. Since speed of association is likely to be greater than the speed of writing and therefore to be hampered by the latter, the subjects were instructed in some of the experiments to write down only every *third* or every *fourth* word that came to them.

Table IX presents the number of subjects having social increments and decrements in the average number of words written under the various conditions.

An increase in speed and quantity of work under group influence seems to be as characteristic of free association as it is of other mental processes. In various experiments from 66 to 93 per cent of the subjects were facilitated by the stimulus of others doing the same task. In experiment 2 there were 14 social increments to 1 decrement. Where every *third* word was written (exp. 4) 75 per cent worked more rapidly in the group; while in the third experiment where every *fourth* word only was written the number of social increments fell to 66 per cent of those affected. This result shows clearly the nature of social facilitation. When the response of individuals is mainly implicit or internal (as in pronouncing two thirds of the words to one's self) facilitation is at its lowest. It is directly proportional to the amount of overt action through which

the co-workers stimulate one another. The decrease in facilitation may also be partially explained by the fact that 'to think to one's self' is generally more difficult when others are present than when alone.

TABLE IX. INFLUENCE OF THE CO-WORKING GROUP UPON SPEED OF ASSOCIATION

Exp. No.	Number of Subjects	Number of Tests		Method	No. of subjects writing more words *alone*	No. of subjects writing more words *together*	No. of subjects writing an equal number of words alone and together
		A	T				
1	3	9	12	Every word written	1	2	0
2	15	11	13	Every word written	1	14	0
3	14	5	6	Every fourth word written	4	8	2
4	8	8	11	Every third word written	2	6	0

The qualitative aspects (not shown in the table) were also significant. In experiment 2 twelve subjects wrote a greater number of personal associations alone than they did in the group. Only three produced more in the group than alone. The introspection also verified this tendency to be 'drawn out of one's self' in the play of word association in the presence of others. When alone there is a

greater tendency toward the ego-centric type of response. Either the group directly affords many associations of a compelling sort, or else it inhibits the attitude of introversion and day-dreaming. It is harder to be 'shut in' in our thoughts when we are in the presence of fellow workers. The decrease of personal associations in the group is of especial interest because it represents, not the result of face-to-face reactions, but an attitude unconsciously assumed upon working in the *mere presence* of others.

By counting the scores of the one-minute periods of the association tests separately the social facilitation was found to be greatest in the first minute and least in the third. That is to say, during the first minute, when associations come readily, social stimulation produces a greater addition of speed than toward the end of the test, when through fatigue and the exhaustion of ready responses, the facility of association has decreased. The greater the degree of activity in progress, the stronger the effect of social facilitation upon it [1]

The Influence of the Group upon Thought. We have seen that the stimulation from the co-acting group facilitates the flow of free association. There now arises the question of its effect upon the more controlled process of reasoning. This problem was investigated by having the subjects write short arguments, during five-minute periods, in the group and alone. Didactic passages of uniform character were chosen from the writings of two ancient philosophers. In each test the subject was given a passage and was directed to write arguments, as many and as valid as possible, to *disprove* the statement of the passage. While working together the subjects were made aware that all were writing upon the same selection. Nine subjects were used, and seventeen tests given in each of the two conditions, A and T.

The effect upon quantity was again in favor of the group work. Eight out of the nine subjects produced a greater number of statements intended to disprove the passages in the social than in the solitary environment. The arguments written were next graded

[1] Another possible interpretation is that the social stimulus when fresh adds to the signal for starting sufficient impetus for an 'initial spurt' which diminishes as the worker becomes more adapted to the presence of the others.

according to their value. The most cogent and relevant statements received a score of 3, those next in worth a score of 2, and the most superficial and unconvincing a value of only 1. Table X contains the result of this scoring.

TABLE X. INFLUENCE OF THE CO-WORKING GROUP UPON QUALITY OF THOUGHT

Quality of Arguments	Number of subjects having higher percentage of arguments described in column at extreme left:		Number of subjects having equal percentage alone and together
	Alone	Together	
Arguments showing best reasoning (score 3)	6	3	0
Arguments showing reasoning of moderate value (score 2)	4	4	1
Arguments showing poorest reasoning (score 1)	3	6	0

It will be seen from the table that two thirds of the individuals produced a higher percentage of *best* arguments while working alone than while in the group; and that, by a reversal of the ratio, two thirds produced a higher percentage of *poorest* arguments while working in the group. The tendency toward reasoning of indifferent value was equal in the two conditions. There is thus indicated a social subvaluent for argumentative or discursive reasoning. This finding is in accord with commonly observed facts. Upon recalling speeches made under a strong social influence, such as that of a political rally or an oral debate, we are often surprised that we had not noticed the faulty logic upon which the arguments were

based. There appears to be a *spreading out* or 'conversationalizing' of our thought in the social setting. We strive rather for convincing effect than for separate ideas of logical worth.

There is, in short, a kind of wordiness in the reasoning done in the group. Six out of nine subjects in the above investigation used more words in their arguments written with the others present than they did when alone.[1] The same law is here illustrated as in the experiments upon association: it is the *overt* responses, such as writing, which receive facilitation through the stimulus of co-workers. The *intellectual* or *implicit responses* of thought are hampered rather than facilitated.[2]

Although we have compared the results of the experiment just described with the quality of reasoning heard in a public debate, it must be remembered that in the group used there was no actual face-to-face contact of individuals. Such social stimuli as were present had only a contributory effect upon the subject's response to the task set. For this reason the tendency to write rather for conversational effect than for logical precision is the more interesting. As in the case of free association, merely being in the presence of others working upon the same problem places us in an attitude toward the task which is different from our approach to it in solitude. When working *with* others we respond in a measure as though we were reacting *to* them.

The Influence of the Group upon Judgments of Comparison. A process allied to thought, namely, the evaluation and comparison of stimuli, has also been subjected experimentally to the group influence. In the first study of this sort the writer used judgments of pleasantness or unpleasantness of odors. Five series of ten different odors each were arranged in bottles, each series comprising a variety of affective values ranging from putrid odors to per-

[1] The average of the six social increments was moreover many times greater than the average of the three social decrements.

[2] The researches of Mayer and Schmidt tend to corroborate this statement. Work requiring careful thought, such as written arithmetic, showed, in their experiments, a much smaller tendency to social increment and supervaluent than the more mechanical exercises. In the present writer's experiments a smaller proportion of subjects had a social increment in multiplying than in the simpler processes, and a smaller proportion in writing every third or fourth associated word than in writing every word.

fumes. Each subject was provided with a set of bottles, so that in the group work all were able to smell the same odor at the same time. The fact that each was judging the same odor at the same time as all the rest was further emphasized by interchanging the bottles among the subjects to show that their contents were identical. The subjects judged the pleasantness of the odors by drawing lines on standard strips of paper, a short line for an unpleasant odor and a longer one for a pleasant odor. The length of the line was proportional to the pleasantness which the subject experienced from the odor in question. In other trials the affective quality was expressed numerically on a subjective scale ranging from 0 to 100.

In each of the five series there were thus obtained ten judgments (one for each odor) while smelling the odors with the group, and ten judgments while working alone. This comprised the record of each individual for that series. The ten *solitary* judgments were now taken and arranged in a graph, the value of each judgment being laid off as distance from the base line upon a vertical ordinate. The ten odors were plotted in this way beginning with the most unpleasant at the extreme left. A line connecting the ten points thus plotted represents the curve of affective judgment for the ten odors in the solitary condition of judging. For an illustration of such a curve see the solid-line curve in Figure 24. The values of the same odors when smelled and judged *in the group* were plotted upon the same ordinates, and a curve thus described expressing the affective judgments of the same series made under the social condition (see dotted-line curve in Figure 24). The curves for the five series together and alone were then averaged for each subject and individual curves made whereby the social and solitary judgments of odors of various degrees of pleasantness could be readily compared for each subject. A final graph was made for the entire group of seventeen subjects based upon an average of the individual curves. This is the graph shown in Figure 24.

An inspection of Figure 24 shows that the curves representing the judgments under conditions A and T cross in their middle portions. For the unpleasant odors (at the left) the A curve is lower than the T curve; while for the pleasant odors (at the right) the reverse relation holds. The unpleasant odors therefore were

estimated as *less unpleasant* in the group than when judging alone; and the pleasant were estimated as *less pleasant* in the group than in the solitary judgments.[1] Expressed in other words there is a tendency toward moderation in judgments made in concert with others, the individual avoiding those extreme judgments at either end of the scale which he does not hesitate to make when judging alone.

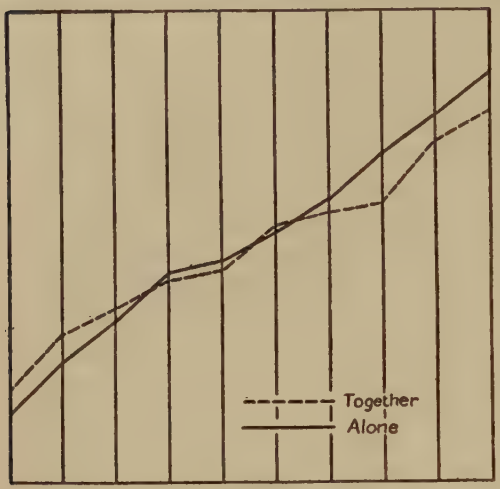

FIGURE 24. INFLUENCE OF THE GROUP UPON JUDGMENTS OF PLEASANTNESS AND UNPLEASANTNESS

(Based upon an average of the average curves of seventeen subjects)

The vertical lines represent ten odors arranged from left to right in order of increasing pleasantness when smelled by the subjects alone. Those on the extreme left represent unpleasant odors. The distance along each vertical from the base line to the solid curve expresses the degree of pleasantness for the particular odor *when smelled alone*. The distance from the base line to the dotted curve indicates the pleasantness of the same odor *when smelled with the group*.

Figure 24 is more than a mere average of the individual curves. It is a type to which the curves of the individual subjects closely conform. The same type of crossing of the T and A curves, indicating avoidance of extreme judgments in the group, was present in the graphs of 70 per cent of the subjects, while the graphs of 23 per cent more approximated this type.

The entire experiment was repeated using series of weights instead of odors. The subjects were required to estimate the weight of each of ten objects, identical in appearance, in relation to a light and a heavy standard given at the beginning of the test. Upon judging each weight they were asked to record their judg-

[1] That this represents the social influence upon judgment, and not upon the pleasantness itself, is shown by a later experiment (*vide infra*) in which the same tendency was revealed in the judgment of non-affective stimuli (weights).

ments as they had done with the odors. The average curves for the judgments of all subjects, together and alone, are presented in Figure 25. This graph closely resembles that shown in Figure 24. When judging in the group the heavier weights were judged as *lighter* than when judging alone; and the lighter weights were judged as *heavier*. In sensory as well as affective judgments the individual avoids extreme opinions while working with others. Sixty-six per cent of the subjects had their T and A curves in the same relation as those in Figure 25; while 27 per cent more came fairly close to this type.

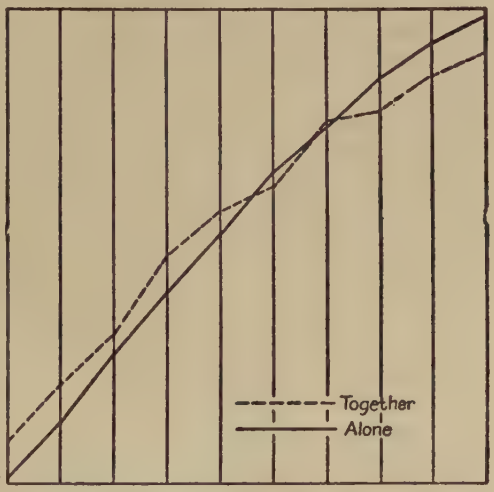

FIGURE 25. INFLUENCE OF THE GROUP UPON JUDGMENTS OF WEIGHT

(Based upon an average of the average curves of fifteen subjects)

The vertical lines represent ten weights arranged in order of increasing weight. The distance along each vertical from the base line to the solid curve denotes the position assigned to that weight with respect to a 'heavy standard' (represented by the base line) and a 'light standard' (represented by the top border of the figure), *when the subject was working alone*. The distance from the base to the dotted curve shows the position assigned to the same weight *when the subject was working with the group*.

The fact, therefore, of shunning extremes and expressing more moderate estimates when in the presence of other judges seems well established. How shall it be interpreted? In the writer's opinion it is the result of an attitude of submission which we assume, often unconsciously, in the presence of a group. Where all are engaged upon the same sort of task this submission takes the character of *conforming* to the manner in which the other members are reacting. More specifically, upon approaching the extremes of the series, the question arises in the subject's consciousness, 'How extreme shall I make this judgment?' He feels that he is more likely to be at

odds with the judgment of his associates if he goes too far than if not quite extreme enough. Hence he errs upon the side of moderation. In the introspective reports the subjects showed lively interest in how the others were judging the odors or weights. This interest took the form of imaginal comparisons, feelings of restraint upon their own judgments, and desire for corroboration. One subject noted that his social consciousness rose to a higher pitch as he neared the extremes of the series.

A social attitude of considerable importance is here revealed. Barring individual exceptions (a few of which were found in the experiments described), there is a basic human tendency to temper one's opinions and conduct by deference to the opinions and conduct of others. Early training and social contact have bred in us the avoidance of extremes of all sorts, whether of clothing, of manners, or of belief. This tendency is so fundamental that we are seldom conscious of it; yet we are seldom if ever without it. In the writer's experiment all discussion was prohibited. The individuals were aware that their judgments would not be compared and that there was no possible advantage in adhering in their reactions to an imagined group average. Yet, as in the case of association and reasoning, the mere proximity and co-working of other persons were stimuli which sufficed to evoke this modified form of response. To think and to judge with others is to submit one's self unconsciously to their standards. We may call this the *attitude of social conformity.*

Individual Differences in Social Facilitation. Individuals differ in their degree of susceptibility to the influence of the group. Children are more susceptible to the facilitating social influence than adults. But even among adults there are conspicuous differences. In the investigations described above certain individuals had a social decrement in their output, or failed to show the usual reaction to group stimulation in thought and conformity of judgment. Habit, customary work environment, nervousness and distractibility, as well as reclusiveness, negative suggestibility, attitudes of superiority, defect of sociality, and other traits are factors which may help us to account for these atypical reactions.

Another type of individual difference deserves special notice.

The facilitating influence of the group is greatest for the slower and poorer workers and least for the more rapid and efficient. Mayer found a consistent relationship of this sort. It occurred also in the experiments upon mental work and association conducted by the writer: the correlation between speed of solitary work and gain through working in the group, though low, was always inverse. In certain instances it reached −.5 or −.6. The explanation of this phenomenon is partly as follows. The average speed of movement of the co-workers is less than that of the most rapid. Hence stimulation from the group would tend to retard rather than facilitate the movements of the latter. The effect would be similar to that of trying to pace a fast horse by a slower one. The slowest workers, on the other hand, would find the contributory stimuli rapid and hence facilitating. Rivalry also plays a part in this result, as will be later shown.

Social Consciousness in the Co-Working Group. The introspective reports of the subjects in these social experiments show practically always an awareness that the others 'are working hard and fast.' The individual is conscious of specific facilitating stimuli, such as the tapping of pencils, shuffling of feet, sounds of attentive respiration, peripheral vision of the speed, pauses, and degree of progress of one's neighbors. The facilitation consciousness resembles other forms of suggestion consciousness in the impulsion toward movement without adequate motive or reason. There was a scarcely articulated awareness that 'the others are writing rapidly, so I must write rapidly also.' Such conscious states may be quite independent of any feeling of rivalry. There was reported also a consciousness of impeding factors, including distraction and emotional inhibition resulting from imagined comparison of one's own achievements with those of others. Realization of inferior performance or of other discrepancies always brought a heightened self and social consciousness. Social consciousness varies according to the type of occupation in which the group is engaged. It is greater for work requiring overt and conspicuous movement than for the more intellectual tasks, which both demand closer concentration and afford fewer stimulations from the behavior of one's co-workers.

Rivalry. Rivalry works hand in hand with social facilitation in the production of the large social increments found both in experiment and practice. Industry, education, and sport are three of the many fields in which the direct spur of competition may be added to social facilitation for increasing the energy and accomplishment of the worker. Combined with the economic incentive of bonuses, rewards, and payment by piece-work, the drive to excel others is an effective tool in the hands of the factory supervisor.

There are limitations, however, to such methods. Rivalry, like social facilitation, increases the quantity, but does not improve the quality, of the output. There is likely in fact to be a deterioration in quality. This is the case in adult occupations even under the conventional instruction 'work as quickly as you can consistently with careful work.' The effect of competition is more favorable for speed of movement than for precision or constancy of attention.

The laws of rivalry must be studied in relation to the individual. While competition is productive of speed in most persons it overexcites and retards the work of some. We may refer again to the experiment of Triplett upon rivalry in the turning of fishing reels (see p. 262). Forty subjects were used in this investigation. *Twenty* of them gained markedly in the competitive trials over their average for solitary work. *Ten* were little affected by the competition. These were for the most part older children. And *ten* actually lost in speed under the influence of rivalry. These last showed evidences of emotional excitement and a loss of motor control. Young, nervous, and excitable subjects are prone to over-stimulation through rivalry, with a consequent lowering of efficiency in competitive performance. Triplett found a higher percentage of girls than of boys susceptible to increase of performance through competition.

The effect of rivalry, like that of social facilitation, varies inversely with the ability of the worker. In 1914 Dr. W. Moede published an account of rivalry in speed of tapping and strength of hand grip. Seventeen boys between twelve and fourteen years of age participated. The more rapid tappers made actually lower scores when tapping in competition with the others than when working alone. The speed of the nine slowest individuals, on the

other hand, showed a distinct social increment. This increment was somewhat larger than the decrement of the more rapid half. By thus reducing the scores of the more rapid and increasing those of the slower workers the individual differences in performance were materially lessened. Moede thus found, like Mayer, that group work tends to bring the workers to a more nearly uniform rate of speed. This 'uniform' or 'leveling' tendency we have already partially explained by facilitation or retardation through the tempo of other workers' movements (p. 279). The slower workers' reactions are facilitated because they are stimulated by movements made at a faster rate than their own. The more rapid lack such incitement. Rivalry also coöperates in the leveling tendency. The more rapid workers, realizing the ease with which they excel, lose interest in the competition and slacken their efforts; whereas the slower subjects, provided they are not hopelessly outclassed, are aroused to greater effort through their zeal to rival the others. This effect of rivalry must be regarded as distinct from that of the difference of social facilitation with which it is allied. The latter is merely the influence of external stimulations from the working of others, while the former represents a difference of attitude and incentive.

In the dual contest the situation is somewhat altered. Here greater ability and lesser ability become the basis of ascendance and submission, traits which are asserted early in the encounter (see p. 120). In contests in strength of hand grip between two boys Moede found that the rivalry attitude gave way almost immediately to an attitude on the part of the stronger to *conquer* his opponent, and on the part of the weaker merely to *make the best showing* he could. The more equally matched the two contestants the greater will be the effect of rivalry on both sides in the ensuing struggle. This is true also of work in groups. By separating the superior half of his group of tappers and allowing them to compete among themselves Moede found that a distinct social increment, instead of a decrement as formerly, was obtained.

Apart from ability, rivalry seems to be more a part of some personalities than of others. There are ascendant individuals who love a contest of any sort, and whose attitude is persistently to win,

and to stand at the *head of the list.* Others find strenuous contests too exciting. They are of the despairing, less self-confident type. Their desire is merely to 'make a respectable showing,' and not to stand at the foot of the list. Continual defeat will usually break down the attitude to win, and reduce it to the less ambitious desire to make a good record. Athletes employ a deliberate device for this purpose. A runner allows his opponent to keep abreast of him for some time, pretending that he is running at his maximum speed and struggling to keep up the pace. He then suddenly darts ahead with a disconcerting burst of power. This discouraging process is known as 'running a man's head off.'

Auto-Rivalry, 'Team-Work,' and Esprit de Corps. There is a consolation for the individual who is outclassed in a competitive performance. Although he cannot equal his rivals' records he can improve upon his own. This is the well-known attitude of *auto-* or *self-competition.* Its true origin in actual rivalry (hetero-competition) may be readily surmised; for it is by improving one's own score that one decreases the distance between self and the next higher competitor. Also, if one cannot excel his rivals, he can at least show a greater *capacity for improvement.* He can thus make a conquest in relative terms. The handicap and the children's maxim of 'taking a person your own size' are practical illustrations of this attitude. There is also less discomfort through emotional tension in the auto-rivalry than in the hetero-rivalry consciousness.

Competition between groups combines the attitude of *coöperation* with that of rivalry. The setting also favors auto-competition. Each member of the team tries to 'outdo himself' in order that his side may outdo the other. There is also an extension of the awareness of self to include the group, and an exhilarating excitement in the feeling of magnified conquest. It is pleasant to win a personal contest; but it is little short of sublime to be a member of a victorious group. Moede's researches included strength tests not only in dual contests, but between competing teams of five boys each. The records of the individuals in the group contests exceeded those in the dual contests, just as the latter excelled the records for the solitary tests.

A phenomenon closely allied to coöperation is that known as *esprit de corps*. The attitude of the individual is the same as in inter-group competition, except that the ideal is permanent excellence, or morale, rather than immediate victory. The soldier with this attitude strives to make his company the best in the regiment, and his regiment the best in the division.

The Physiological Basis of Social Facilitation and Rivalry. When, in the co-working group, rivalry enters and produces a social increment, we may assume that the task is no longer simply a mechanical duty, facilitated by working with others, but a definite *struggle* in which each individual strives to prevent the others from beating him (that is from thwarting his habit of self-esteem). Whatever the competitive occupation may be, it serves therefore as an efferent modification of the prepotent struggle response, that is, as a method of carrying on the struggle.

As introspectively reported, rivalry is emotional in character. It is a kind of mild anger which accompanies the modified struggle reaction. Its close relation to the stronger form of the anger emotion is shown by the fact that it passes readily into the latter. Competition in industry, scholarship, or other fields usually provides a successful method for use in the struggle to assert our prepotent interests. Rivalry is the emotion here aroused. Under some circumstances, however, more violent struggle responses are needed. Anger, for example, is quickly aroused by unsportsmanlike conduct on the football field, because without fair play it becomes impossible to win the struggle by the method of sport; and this outlet being blocked, the more primitive responses are called forth. Friendly boxing contests lead often to more serious blows, the rivalry and the anger emotions being fundamentally of the same character. The visceral reaction in rivalry, as in other emotions, probably liberates internal secretions, and involves other responses characteristic of the sympathetic system. By this means a higher level of energy is provided for the competitive exertion.

Social facilitation without rivalry is more difficult to explain. Since we usually both hear and see ourselves work we might suppose that the sound and sight of our movements become conditioning stimuli; and that they tend to reëvoke or augment in us these

very movements from which they were derived. Similar movements made by others, since they give similar stimulations, would then serve the same purpose. When multiplied many fold by the co-working group these conditioning, contributory stimuli become important agents in facilitation. But on the other hand, there are many forms of task in which the explanation of conditioned response would scarcely apply. Attitudes of a more complex sort are also probable: knowing that those about us are to be doing the same task, we are disposed to work more rapidly *from the start*. Meumann ascribes social facilitation to an attitude of over-compensation. We work so hard to overcome the distraction incident to group activity that we actually accomplish more than we would without these hindrances.

Summary of the Experimental Study of the Group Influence. Groups in actual social life are far more complex in inter-relations of individuals than the experimental settings described above. For this reason, although the experimental findings are useful and important, generalizations from them must proceed with caution. We may summarize these results as follows:

The social stimulations present in the co-acting group bring about an increase in the speed and quantity of work produced by the individuals. This increase is more pronounced in work involving overt, physical movements than in purely intellectual tasks. In adults the group produces no improvement in the constancy of attention or the quality of the work performed. Some individuals in fact do inferior work in the presence of co-workers. There is a lowering of the logical value of reasoning carried out in the group; but an increase in the number of words by which such reasoning is expressed. In at least one type of work the tendency toward a social increment is strongest in the earlier part of the task.

The social increment is subject to individual differences in respect to age, ability, and personality traits. It is greatest for the least able workers and least for the most able.

Two processes are accountable for the accelerating effect of the group upon the individual's work. The first of these is social facilitation. The movements made by others performing the same task as ourselves serve as contributory stimuli, and increase or has-

ten our own responses. This process is accompanied by a consciousness of impulsion. The second process is rivalry. Its occurrence is in direct proportion to the competitive setting of the group occupation, though a certain degree of rivalry seems natural to all co-activity. Its effect is that of emotional reinforcement, the struggle to assert various prepotent needs or interests being the response which it reinforces. It improves the speed and quantity rather than the quality of the work in which it is operative. Rivalry, like social facilitation, varies with age, sex, and personality. Some persons are susceptible to an actual *loss* in performance through over-stimulation when the rivalry situation is stressed. In order to get the maximum effect from rivalry, two individuals must be about equally matched in ability. When rivalry produces a social increment in a group there is a tendency for the performances of the individuals to approach a common level. This is because the more rapid slacken their effort through absence of formidable competitors, while the slower increase their effort in the hope of excelling those above them. Auto-competition and rivalry between groups have their characteristic conscious attitudes, and are conducive to substantial gains in the output of the individuals.

Working in the presence of others, even though there is no direct contact nor communication, establishes certain fundamental attitudes. We are confused and distracted whenever we feel our reaction to be at variance with or inferior to the average behavior of those about us. In the association process we tend to inhibit ego-centric trends and personal complexes. In our thinking we assume a conversational attitude, becoming more expansive and less precise. And finally, we avoid extremes in passing judgment, tending, often unconsciously, toward conformity with what we think to be the opinion of those about us.

Influence of the Face-to-Face Group

The Nature of Face-to-Face Groups. Direct social stimulation and response do not lend themselves to experimental control so readily as the contributory influences of the co-acting group. For this reason the investigation of responses in the face-to-face group has been neglected. Yet this is a large and important field. When-

ever two or more persons talk or otherwise react directly to one another we have a primary, or face-to-face, group.[1] The doorstep conversation of two housewives represents one of the simplest and most universal forms. Other examples of the 'sociability' type are the children's party, the reunion, and the intimate afternoon tea. Pals, cronies, and cliques of three or four (rarely exceeding six) are common in childhood and youth, but are generally displaced in adult life by associations of vocation and family. Small discussion groups, literary and scientific societies, and committees, though including a higher degree of organization as well as factors of co-activity, retain also a certain face-to-face character. The consultation of doctors, lawyers, and financiers, councils of war, and deliberations of juries illustrate more imposing aggregations of the same type. In the governmental assembly, the convention, and the political rally the face-to-face relation, though present, tends to pass over into the situation of the audience, the co-acting group, and the crowd. The manner in which human beings react to one another under all these conditions presents a vast field of inquiry as yet scarcely touched by observation or experiment.

Social Control, Participation, and Sex as Drives in Primary Groups. In many face-to-face groups, such as committees and other constructive bodies, social behavior takes the form of securing adjustments of ascendance and submission among the members. Each asserts his opinion as to what should be done, and supports it by suggestion, by logic, or by the domination of his personality. Final decision in the adoption of a plan may come by discussion, persuasion, compromise, or sheer majority. In any case, however, the struggle for personal ascendancy looms large. The conclusion arrived at is as likely to be the result of control by ascendant personalities as of rational planning.

Face-to-face groups of the congeniality type are based upon the pleasure of responding to others and causing others to respond to us. The drive is for control of others, not to the extent of *determining* their reactions, but simply to make them react. Social behavior in itself is sought as an end. There is a universal tendency

[1] A primary group, that is, in the psychological rather than the sociological sense (see footnote to p. 260).

to produce reactions in others. It originates probably in the habit developed in early childhood of controlling parents and others in order to secure satisfaction of the bodily needs (cf. Chapter III) and of interests based upon these drives. Another probable source is the childish habit of doing things in order to attract attention (that is, to make others react to one).[1] As we grow up and become more self-sufficient the old habit persists as an inclination to control merely for the sake of controlling.

The reaction-getting habit is both striking and universal. The boy is not content with seeing a squirrel sitting in a tree; he must throw a stone at him to make him do something. The writer's three-year-old son made stealthy efforts to tread on his father's bandaged sore toe, looking meanwhile at his face in sober expectancy. A boy of eight did the same thing, except that it was a 'make believe' attempt. Bullying and teasing is universal in childhood, and in maturity grows into badinage and practical joking. As the child treads on sore toes we grown-ups tread upon complexes and idiosyncrasies. Traveling salesmen contrive to get their interlocutor in a good light, and then try out various jokes and items of interest in order to make him reveal his personal traits. Reclusive persons irritate us, because it is difficult to get a response from them. The superiority of the mechanical toy and the talking doll to other playthings is based upon our reaction-getting drive. In all accounts of sensational trials, executions, and the like, the public demands to know just how the victim reacts when the sentence is passed or the noose adjusted. No newspaper account is complete without these details. The 'close-up' of the actor's face in the 'movie,' and the savage humor of the comic supplement indulge our craving to get a reaction, ludicrous or tragic, but always intense, from every situation.

Congenial face-to-face groups, to be sure, are not usually based on social participation in this elementary and savage form. Yet sociability, responding and producing responsive expressions in others, is a socialized form of the same drive. These groups afford

[1] Professors Smith and Guthrie have suggested that the so-called perversion of exhibitionism (as well as boisterous, profane, or obscene behavior generally) is the persistence of a childhood method of gaining attention and producing reactions in adults.

also other pleasurable types of response. The facilitation of movement in co-activities such as dancing, card-playing, laughing, and experiencing pleasant emotions in the company of others are fundamental enjoyments of social gatherings. We derive an increase of pleasure in our drives and hobbies by discussing them with those whose interests are similar. Novel ideas, witty remarks, and personal gossip, diversions sanctioned for us because others indulge in them, release our inhibited sex attitudes and hostilities in an agreeable fashion. More than is generally recognized the popularity and animation of the face-to-face group is based upon sex attraction. This impulse usually remains unconscious, and we ascribe our pleasure to 'sociability' or to a 'gregarious instinct.' But from the kissing games of pre-adolescents to the ballroom gayety of adults the mixed party is universally favored. The stag affair is sought only as a relief from the too rigorous strain of inhibitions made necessary by the presence of the opposite sex. Permanent face-to-face groups and 'crushes' among college girls depend to an unrecognized degree upon unconscious sexual fixation. Rivalry, display, and the prepotent habit of securing social approval add to the zest of the primary sociability group, and often ally themselves with the desire for sexual conquest.

Conversation and Discussion. Conversation, the outstanding form of social behavior and contact in primary groups, deserves a word of notice. Little need be said about its more obvious aspect, namely, that it is an interchange of stimulus and response by which thoughts and feelings are aroused in one's interlocutor. More fundamentally considered, it involves the opposed efforts of two persons for expansion and control through language, each being only partially successful. A tries to control B by impressing upon him his (A's) knowledge, feelings, or beliefs; and B strives in the same manner to impress A; but neither succeeds to any marked extent. This fact can be readily observed by eavesdropping upon the conversation of others. It cannot be detected in our own conversations because we are so animated by our own narrative or viewpoint that we misjudge the other's sympathy with what we are saying. We think it to be as thoroughgoing as our own.[1] The

[1] This is the phenomenon of *social projection*, a process which will be discussed more fully in later chapters.

attitude of *the other* speaker, however, might be put into words as follows: "What you say is interesting. But now listen to *this* that happened to *me!*" Since B's attitude is ascendant rather than passive and receptive he does not react to A's remark with serious or logical consideration. Often he does not fully understand it. Some word or phrase of it serves as a trigger to set off his own habit of thought or his own associated experiences. "That reminds me" is the frequent overt indication of this process.

In discussions, where one is not permitted to be 'reminded of things' at random, but must stick to a point, there is still the most imperfect sort of contact. In formal debates the argument of one speaker will be taken up by the opponent, not for the purpose of giving a direct answer on the former's ground, but merely as an introduction from a new angle to the opponent's attack. So he reiterates his arguments with new variations upon the old theme. We go away from such gatherings disappointed that such good minds should have wholly failed to connect.

In spite of all this, discussion produces constructive results; for it brings new points of view to bear upon the thought habits of the participants. The writer has collected the written opinions of students upon debatable questions before and after a period of free discussion. In the reports written afterward there were instances where facts presented by others, though taken up in a sense different from that intended, had been worked into new and very substantial arguments. Conversation and discussion thus proceed by a series of mutual partial misunderstandings which may produce good results in directing old habits of thought along new channels. This is what is meant when we say that one's genius strikes fire from the words of another. If one is not too impervious to social stimuli, something great and even *new* may be produced by putting two or more heads together. From this standpoint it is as necessary also to have an opinion of one's own as it is to be willing to listen to others. Otherwise the result is simply a replica of the other's thought. To conceive a new idea we must have an old one to start with. This stimulation of new ways of conceiving old facts represents the profitable side of discussion. It is coming to be

recognized in modern education in the 'socialized recitation' and the 'group game.' [1]

The good conversationalist is therefore one who can be a listener as well as a talker. In few human relations do personality traits count for so much. One must be ascendant, yet disciplined to alternate his ascendancy with attitudes of submissive and sympathetic attention. He must be expansive and still control his discourse by tact and an æsthetic understanding of proportion. He must be able and ready to respond to faint and even unconscious clues from the behavior of his fellows. His associative processes must be rapid and capable of following abrupt changes. And he must possess insight, humor, and a genuine love of social participation.

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[1] It is doubtful whether this advantage applies in judging between two clear-cut alternatives, such as the question of 'guilty or not guilty' which the jury tries to settle by discussion. Münsterberg found an increase in the accuracy of individual's judgments after such a discussion. These results, however, have been contradicted by the experiments of Professor Burtt (see references at the end of this chapter). Further experiment is needed upon the whole question.

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CHAPTER XII

RESPONSE TO SOCIAL STIMULATION IN THE CROWD

The Crowd Situation. A crowd is a collection of individuals who are all attending and reacting to some common object, their reactions being of a simple prepotent sort and accompanied by strong emotional responses. These conditions distinguish the crowd from the co-acting group, since in the latter the attention of each individual is usually concentrated upon his own task, and his responses are non-emotional habits of a rather complex type. A co-acting group whose members are attending to a common stimulus may be readily converted into a crowd. The crowd differs from the face-to-face group in that its individuals respond to some object common to all, while the members of the face-to-face group respond entirely to one another. The social stimuli offered by the face-to-face group are *direct;* those afforded by the crowd are *contributory*.

Dynamically the crowd is a large-scale suggestion phenomenon. It exhibits all three phases of the suggestion process. The people are brought together by a common interest preparing them for a certain type of action. The harangue of the leader, or similar stimulus common to all, increases this preparation to the point of breaking forth. The command or first movement of some individual toward the act prepared affords the stimulus for release. And finally, when act and emotion are under way, the sights and sounds of others' reactions facilitate and increase further the responses of each.

A number of vivid accounts of crowd behavior have been written. They have, however, directed attention mainly to the crowd as a whole, and so have been descriptive rather than explanatory (cf. Chapter I). Individual causation has either been overlooked or else subordinated to such metaphors as 'psychic planes,' 'forces,' 'contagion of emotion,' and 'crowd self.' Although valuable as pioneer studies, these accounts, in the writer's opinion, fail to reach the heart of the crowd situation.

Prepotent Individual Reactions as the Basis of Crowd Phenomena

Prepotent Drives in Various Crowds. One often reads that in violent mobs the elemental cave-man stands revealed. Fear, lust, and rage appear in their naked simplicity and barbaric strength. Some writers assert that the 'instincts' are here released in their original, unmodified force. Others, of more romantic bent, believe that in the crowd there is a regression to an atavistic or primitive type of man. Whatever the manner of explanation, the fact is clear that in crowd phenomena the fundamental drives of protection, hunger, and sex are the supreme controlling forces. These responses (described in detail in Chapter III) are modified in the direction of brutal strength rather than that of socialization. In the crowd panic in a theater fire the reactions of *withdrawal* and *escape* occur in their fullest power, unchecked or undirected by regard for others. The socialized modifications of these reactions, such as withdrawing in a way that does not inconvenience or endanger others, are inhibited because insufficient to cope with so overwhelming a stimulus; and the original withdrawal reactions accompanied by terror are released in their immediate and most vigorous form.

Food riots among the famished populations of the Central-European cities serve as recent illustrations of the release of the *hunger* reaction. A similar epidemic of looting accompanied the Boston police strike a few years ago. Old attitudes of envious longing for the goods displayed in shops were suddenly released by the removal of the pressure of the law. The participants in a lynching mob exhibit responses of *struggle* against the thwarting of certain fundamental individual drives. If *our own* kin are done violence, our prepotent habits of love (family and sexual responses) are violated or imperiled. Hence the primitive wrathful struggle reaction is evoked. It is precisely this response, conditioned by the various details of the case as stimuli, which is called forth when we learn of this sort of violence done to others. We put ourselves in the place of the person who has been outraged, or the near kin of that person, and react accordingly. Sympathetically aroused rage

at the thwarting of *family and sex interests* is thus the dominant impulse. Indignation of the same type as that aroused in the lynching crowd has been widely expressed in regard to political radicalism, bomb plots, and reported 'nationalization of women' in Russia. The defense of life, of property, and of the love interests in the family have become public issues precisely because they are felt as private demands in the life of each individual. The strike riot combines the various elementary drives. There are involved the fear of losing one's livelihood and the angry struggle against powers which threaten the hunger drive and the love interests centered in the family of the workman.

All of the fundamental, prepotent reactions are therefore operative in crowds of various sorts; and conversely, all spontaneous, mob-like crowds have their driving forces in these basic individual responses.

Crowds as Struggle Groups. Crowds then are struggle groups of an elementary and violent character. With the exception of a few varieties, such as panics and religious revivals, the reactions of struggling, fighting, and destroying are their universal phenomena. The menacing of the drives of a large number of individuals simultaneously both draws them together and incites them to common action. The struggle and the anger may take a mild form such as the rivalry for supremacy in a football match; or it may be as violent as that of the lynching party. But it is always a struggle of some sort against limitation, oppression, and opposition to the free satisfaction of original or derived drives.

It is often said that crowds are creatures of hate and invariably demand their victims. There is, however, sufficient psychological reason for this. The formation of the crowd springs from the collective struggle responses of individuals. The mob members do not demand a victim merely in order to shed blood, but to restore their thwarted responses to their normal operation. The anger is often unreasonable, and the choice of the victim hasty and unjust; but the principle stated remains true. If the culprit lives, law-abiding people feel the security of their homes and property threatened. He must therefore be put to death. Crowd vengeance is thus a manifestation of the struggle response.

Individual factors are often neglected in crowd theories. Accounts of the earlier writers, such as M. Le Bon, suggest that crowd phenomena result from the mere fact of aggregation, and that the crowd is an enormous detached force to be wielded in any direction at the caprice of its leader. The first of these implications may be seen in the following quotation: — "the fact that they [the individuals] have been transformed into a crowd puts them in possession of a sort of collective mind which makes them feel, think, and act in a manner quite different from that in which each individual of them would feel, think, and act were he in a state of isolation." [1] This interpretation puts a premium upon the bare aggregation into a crowd, and minimizes the significance of those fundamental drives which control the individual. Le Bon drew many of his illustrations from the crowds of the French Revolution. Yet he failed strangely to realize that it was not the 'collective mind' or the 'crowd impulse' which stormed the Bastille and guillotined scores of aristocrats. It was the *individual citizen* who did this — the man who 'in a state of isolation' had for many years felt the same hatred and cherished the same spark of vengeance and lust for freedom that was now bursting into flame in the crowd. Nothing new or different was added by the crowd situation except an intensification of the feeling already present, and the possibility of concerted action. The individual in the crowd behaves just as he would behave alone, *only more so.*

Since individual preparation for response underlies crowd phenomena, it follows that the course of action is fairly determined from the start. While the crowd may sometimes be quelled, it can scarcely be diverted from its original intent to an opposite one by the words of a demagogue. When such a one tries to do this he is usually ridiculed or forcibly silenced. If he succeeds in persuading many of the individuals to adopt his view, the crowd is dispersed. As long as it remains a crowd it must cling to the fundamental reactions upon which the individuals have been launched. Crowd members are suggestible in the hands of a leader; but the suggestion must always be in the direction of some compelling response of the individuals. The common notion of the fickleness of crowds must certainly be qualified.

[1] Gustave Le Bon: *The Crowd*, p. 6.

It is the individual therefore who is the *raison d'être* of the crowd. His response both provides the motive for the collective behavior and limits its direction. Action is facilitated and intensified through the presence of the crowd; but it originates in the drives of the individual. This fact is fundamental for our understanding of the more subtle phases of the crowd influence to which we now turn.

Release and Heightening of Individual Reactions in Crowds

'Contagion.' The Induced Emotion Theory. Although the behavior of the individual in the crowd is not different in kind from his behavior when alone, it is greater in degree. The excesses to which some men go in the license of warfare, the industrial or race riot, the lynching mob, and the religious and financial craze, are too familiar to require special illustration. Certainly there is something in the stimulations afforded by crowd members to one another which augments the responses of each in an extraordinary degree. This has been recognized for a long time; but attempts to explain the mechanism of such interstimulation have been very meager. Writers have been content to speak of it in metaphorical terms such as 'conduction' or 'contagion of emotion.' Professor McDougall has advanced his theory of sympathetic induction of the emotions as an explanation in this field.[1] This theory has already been stated and criticized (p. 234). It will be recalled that its main hypothesis regards the facial and bodily expression of an emotion as a stimulus, arousing, as an instinctive response, the same emotion in the beholder. If we grant this theory to be a true account of the influence of the emotion of one person upon another, the large number of such evidences of emotion within the crowd would act with combined effect to evoke in each individual an emotional reaction of terrific power.

We found occasion to question the existence of the process of sympathetic induction in Chapter X. A further objection to its use as an explanation here is that it overlooks the fact of sufficient reason for response within the individual himself. We can best illustrate the defects of this theory by applying it, with a rival

[1] *The Group Mind*, p. 36.

theory, to an actual incident analogous to the crowd phenomenon. The writer was once pulling two little children, a boy and a girl, in a small cart. Upon rounding a curve the cart upset spilling the occupants onto the pavement and shaking them up considerably. The boy, though bruised and alarmed, was evidently suppressing his tendency to cry, when the girl recovered her breath sufficiently to set up a loud wail. The boy thereupon broke into crying. According to the 'induction theory' the sight and sound of the weeping in the girl served as stimuli which aroused the same reactions in the boy, because crying tends to follow as an instinctive response to the expression of grief in another.

If we examine the case more closely, however, we shall find two essential elements: (1) a *common stimulus* (the shaking up) producing in both children a preparation for the same response (crying); and (2) the release of this setting in the second individual by the sight and sound of its occurrence in the first. Both phases were necessary parts of the incident. If the boy had not been spilled out of the cart along with the girl, the crying of the latter would probably not have caused him to cry. On the other hand, if the girl had kept silent, it is unlikely that the bruises received by the boy would have set him to weeping. Thus, although an important *allied effect* is seen in the social stimulus expressing the same emotion, we must recognize the necessity of *a reason for the reaction in the individual himself*. To explain the boy's behavior as the result of 'sympathetic induction' of emotion from the behavior of the girl is therefore to give false emphasis to the latter. There was already in the boy the beginning of the crying reaction (facial expression), showing that a reaction strongly prepared was being inhibited. The stimulus from the cry of the girl merely aided in breaking through this inhibition and releasing the prepared reaction. It contributed to the emotional response, but it did not *induce it*.[1] [2]

[1] The mechanism of the release, moreover, was probably not an instinctive response to sounds by the making of similar sounds, but the operation of the conditioned circular reflex formed early in infancy. The individual tends to respond to the sound of others crying by crying himself because he has previously heard similar sounds from his own crying while engaged in this act. This mechanism for language responses was explained in Chapter VIII.

[2] To show that we have not been too arbitrary in applying Professor McDougall's theory to the incident used let us examine a similar case cited in support of the the-

Stated in this way the incident falls definitely under the head of *social facilitation* as defined and illustrated in the preceding chapter. When the individual is set to respond by a certain act the stimulations received from the performance of that act by another serve to release the act and to augment it as it is being carried out. We have here, in the writer's opinion, the exact situation existing in crowds. We have already seen that there *is* a strong incentive operating in each individual quite apart from the social stimulations present. Given this preparation for action, or the incipient response itself, the similar behavior of others provides the release and the augmentation of the act and the emotion to a high pitch.

Social Facilitation in Crowds. The same law, therefore, which explains the social increment in the co-working group is operative also in the heightening of emotion and action in the crowd. In the former case it was the performance of some complex task which was facilitated by the co-working of others. In the crowd it is the emotional reaction which is facilitated by the expressive behavior (facial expressions, gestures, shouts, hisses, murmurs) of the others. In the crowd there is also the attitude for the overt reaction of flight or attack, prepared in each individual by the common stimulus to which all are attending. This is released and augmented by the sight of others performing the same act. The pressure of elbows and bodies as the crowd surges forward effects the individual in a powerful manner. It serves not only as a social facilitation, but as a suggestion of the vast size and strength of the mob and the necessity for placing one's self at its disposal. In the crowd, even more than in the group, the individual assumes an attitude of the most complete submission and conformity. This

ory by that writer himself (*Social Psychology*, 8th ed., p. 95, footnote). He reports that his child while held in his arms was terrified by a peal of thunder. He himself, though normally unaffected by the noise of thunder, felt a distinct wave of terror upon hearing the scream of the child. His own fear he considered as a pure case of emotion induced in him by the expression of that emotion in another. But the facts seem also to fit the following very different explanation. Every one is frightened to some degree by sudden loud noises. (Such stimuli produce innate withdrawing responses in the infant.) As adults, we have learned to inhibit the full expression of fear at the sound of thunder, or at least we rationalize it by ascribing it to the lightning; but the neural setting is there, ready to be released by any allied stimulus which occurs in its support. Such an allied stimulus was given by the scream of the child. The emotion was therefore not induced, but only facilitated, by its expression in another.

attitude renders him still more susceptible to the effects of social facilitation.

Although social facilitation is rather an observed process than a complete principle of explanation, it is certainly a more accurate interpretation of the facts than is the induced emotion theory. The individual who is '*one of the crowd*' will go to any extreme in carrying out the action he is set to perform. Facilitation can increase his response almost without limit. Lacking this common setting social stimuli have little facilitating value. We may summarize the explanation of crowd excitement in the following words: *By the similarity of human nature the individuals of the crowd are all set to react to their common object in the same manner, quite apart from any social influence. Stimulations from one another release and augment these responses; but they do not originate them.*

There are two objections which might be raised to the statement that emotions are not caused by the expressions of one's fellows, but only brought to a higher pitch. First, it is alleged that some participate in the laughter and excitement of crowds when the cause is unknown to them. They laugh because they hear others laugh. While there are probably individual differences, laughing under these conditions is usually a pretense. We usually inquire what the joke was, so that we can react with the others. The same tendency is noted in experiments in judging facial expressions. The attempt is made to guess the situation that would evoke such expressions; and upon determining this the recognitive response to the expression is immediate and genuine. This well represents the crowd situation. The cause of the reactions of the others is known because all are responding to the same situation; and this fact gives full meaning and stimulating value to the emotional behavior in one's fellows.

The second objection is that persons not in sympathy with the attitude of the crowd members are sometimes won over by stimulations from the crowd. Those who "come to scoff remain to pray." A young man who went to a meeting of international radicals in a spirit of hostility to their views found himself rising with the throng when their brotherhood hymn was sung. Such cases, however, are explained by the attitude of submissiveness and

suggestibility in the presence of large numbers. In certain individuals this attitude leads to conformity of action. It is a set for *general conformity*, however, rather than an induction of specific responses by the sight of those responses in others. More ascendant persons report that their hostility and opposition to a crowd they oppose are increased, instead of abolished, by the expressive behavior of those about them.

It seems likely, therefore, that our preceding interpretation of crowd excitement holds true in general. The origin of responses is determined not by crowd stimuli but by the prepotent trends of the individual himself. The increase in the violence of emotion and action in crowds is due to the effect of behavior stimuli from others in releasing and reinforcing these prepared responses of individuals.

The Origin and Spread of Social Facilitation. Special Devices. The initial movements which release and augment the activity of the crowd members usually begin at some center, and spread in widening circles to the periphery of the crowd. The process is swift and complete. The first to act or express their feelings are the most suggestible and uninhibited persons. Ignorant and impulsive individuals may thus precipitate an avalanche of social stimulation which finally overwhelms the more intelligent and self-controlled. The vast power of crowd facilitation may thus be at the disposal of the least competent. This is one of the serious charges brought against the crowd as a factor in modern social life.

In our study of group influence we found that the social increment was in direct proportion to the overt evidence of the coworking of others. The same rule applies to crowd excitement, and is practiced by all those skilled in the art of public control. Speakers who wish to stir their audiences use special methods for eliciting responses *of a demonstrative sort*, so that an abundance of contributory social stimuli may be in evidence. The introductory humorous story arouses the individual's mirth, and facilitates through his laughter the laughter of others. Appeals are made to emotional rather than to thought responses; for emotional expression is the very material of which crowd facilitation is made. A crowd cannot be made up of reasoning individuals, because reasoning involves few outward responses through which individuals

stimulate one another. Sentiments common to all are touched upon, since these involve expressive postures of stimulating value. Revered names are mentioned, and appeals are made in the name of justice, brotherly love, and patriotism. Routine activities such as reading or singing in concert, and rising and sitting together are familiar methods of making individuals more aware of one another, and so establishing a receptive attitude toward the expressive stimuli later to be evoked. Crowd building thus forms a vital portion of the forensic art.[1]

Spatial Factors and Circularity in Crowds. Social Behavior in the Audience. If a number of individuals attending to some common object are arranged side by side in a row, each individual (except those at the ends) will receive contributory visual stimulations from *two others*, his right- and left-hand neighbors. In a crowd, however, the irregular grouping of persons makes it possible for each to be affected from all sides, and to receive stimuli, not from merely one or two, but from a large number of individuals. This fact, a purely mechanical one, must be recognized in explaining the heightened reactions of the individual in the crowd. Not only is the strength of social facilitation multiplied many fold by this arrangement; but each person is overwhelmed with greater submissiveness in the observed presence of large numbers.

Many of the persons, moreover, who stimulate their neighbors see or hear the *intensified* response which their behavior has produced in the latter, and are in turn restimulated to a higher level of activity. This effect is again felt by their fellows. Thus the effects of social stimulation increase themselves by a kind of circular 'reverberation' until an unprecedented violence of response is developed (cf. p. 152). The circular effect thus made possible upon the individual is multiplied by the number of persons in the crowd who are within range of mutual stimulation with that individual. It is thus said that in a crowd the strength of excitement increases in geometrical proportion to the number of individuals present.

Public speakers not only aim to produce individual responses of value for social facilitation; they give attention also to the spatial

[1] Cf. W. D. Scott: *The Psychology of Public Speaking*, ch. 12. A number of the crowd-building devices mentioned above have been drawn from Dr. Scott's account.

factors influencing the action of such stimuli. Requesting a scattered audience to sit near the front not only increases the direct control of the speaker, but also brings the auditors sufficiently close together for their expressive behavior to take effect upon one another. Dr. C. R. Griffith has shown that the presence of social stimuli on all sides influences the progress of the student in the classroom. In lecture classes the average grades of students taken from various parts of the room show that the optimum region for high averages is slightly forward from the middle row of the class and well in from the sides. In the first couple of rows and in the rows at the extreme rear, as well as in sections separated from the main body by aisles and pillars, the average is distinctly lower. The good student sitting in these regions usually redoubles his effort and overcomes the handicap by harder work. But the indifferent student shows evidence of permanent lowering of marks traceable to the lack of the accustomed spur to effort which he received in other classes where he sat nearer the center of the group.[1]

Due allowance being made for unfavorable angle of vision, distance from the lecturer, and the like, there remains clear evidence that these differences in attainment are due to differences in facilitation received from the attentive attitudes, note-taking, and signs of interest of those about one. Students in the front row had only their immediate right- and left-hand neighbors as sources of contributory stimulation. Those in the rear row had, in addition to these, a large number of stimulations from in front of them; but they lacked the 'feeling of being backed up' by fellow auditors. Though we are not visually stimulated by those behind us, our attitudes for work or excitement seem to be considerably determined by the knowledge that they are there.[2] Dr. Griffith's results are the more remarkable because the social stimuli afforded by listeners to an academic discourse are usually very slight. In the excited behavior within the crowd these gradients of social facilitation must be marked indeed.

[1] These findings reveal the unfairness of always seating students alphabetically.

[2] Instance our uneasiness regarding behavior which takes place behind our backs. When sitting with their backs to the middle of the room some persons are so sensitive to faint sounds made behind them that they believe they have an uncanny power, or a 'sixth sense,' for feeling the presence of human beings.

The relation of audience and speaker is in itself a complex phenomenon. The individuals respond to the direct stimulation of the spoken sounds. Meanwhile the overt components of their responses are serving as contributory stimuli to one another enhancing the effect of the speaker's words. The responses are further increased by the circular mechanism described above. Finally, there is a circular facilitation of response between the speaker and the listeners. The 'amens' and 'hallelujahs' of the congregation stir the revivalist to still more eloquent discourse, thereby increasing *again* the volume of religious emotion. The cries of the audience provoke ever fiercer denunciations from the revolutionary orator. These in turn release fresh torrents of emotional response.[1] Many audiences which begin as groups of reasoning, co-acting individuals thus develop into turbulent crowds.

Suggestion and the Suggestion Consciousness in Crowds. The social facilitations present in crowd-audiences are a portion of the general suggestion process outlined in Chapter X. Before the actual suggestion for release of action there is the preparation of an attitude for compliance with whatever stimulations to action may be received. The prestige of large numbers is probably based on the primitive ascendance of direct physical power. We are overwhelmed by the press of humanity about us. Individuals therefore upon finding themselves in a crowd adopt an immediate, though perhaps unconscious, attitude of yielding to all suggestions coming from that source. The commands of the crowd leader are multiplied in their weight by the number of auditors upon whose ears they fall, for they seem to be coming to us from them as well as from him. In this thorough submission of attitude it is not to be wondered at that cries such as "Lynch him!" and "Kill the scab!" touch off the skeletal reactions with which they are integrated (see pp. 243–44).

[1] The term 'polarization' has been suggested to designate audiences which are under the perfect control of the speaker's words, or whose attention is completely riveted upon the speaker. The term, however, is misleading in that it overlooks the contributory stimuli from another source, namely from other listeners, which are so vital in maintaining the relation indicated.

Cf. Woolbert, C. H. (reference cited at the end of this chapter).

Social facilitation and the submissive attitude inhibit all forms of response at variance with the crowd tendency. They also narrow the focus of attention upon the suggested act. All marginal consciousness, all deliberative or restraining factors, and all critical attitudes are inhibited. Even the background of the consciousness of self, present in many of our more normal moments, is obliterated. There is a narrowing of the conscious field to the acts and feelings suggested. Emotional factors contribute to this effect. Even in a solitary environment an extremely violent emotion causes a temporary lapse of personal consciousness. As we say, 'we didn't know what we were doing until it was all over.' The bodily changes in the wild excitements of crowd action evidently produce a similar effect.

The mental condition just described resembles the behavior and consciousness of the hypnotized subject. There is little reason, however, to assert with some writers, that crowds are hypnotized, and that crowd phenomena are due to the 'subconscious activities' of a 'dissociated self.' Hypnotic suggestion phenomena, such as collective hallucinations, 'gift of tongues,' and the like are sometimes seen in crowds under long strain of hope or expectation. These, however, are to be regarded rather as anomalies due to special forms of preparation than as typical instances of suggestibility in crowds.

The Conservatism of the Crowd Man. Submission to large numbers has a further consequence. It renders individuals in the crowd extremely conservative. Conservatism may be defined psychologically in two ways. The first way is to regard it as an attitude of conformity with one's contemporaries. This we have found to be present in judgments rendered in the group. It is carried over into the crowd as conformity, not only of thought and belief, but of feeling and overt action. The second conception of conservatism is that of adherence to the historically established view, or tradition, of the crowd. This attitude is fundamentally the same as the other. The reason why we refuse to depart from the traditional form of response is largely because, until proved otherwise, it is the accepted form. After a sudden change in popular feeling or belief conformity to tradition is avoided and

stigmatized as 'reactionism.' It is the opinion of *the present majority* to which the individual adheres. Both forms of conservatism are thus based upon the attitude of submission to the crowd, and both are illustrated by the drift of opinion in such bodies.

The conservatism of the crowd man is always in relation to his particular crowd. However radical a crowd may be from the standpoint of the nation at large, its individuals are always conservative in relation to the standards it maintains. Their submission to the decisions of its majority and to its established principles is absolute.

Attitudinal and Imaginal Factors in the Crowd Behavior of the Individual

The Impression of Universality. There are strict limits to the assumption, stated on page 301, that the number of stimulations brought to bear upon the individual increases in a geometric relation to the number of persons in the crowd. If one is surrounded by a throng, those near at hand shut out the view of those more distant. Barring volume of sound, therefore, a man in the center of a crowd of five hundred should receive as many contributory stimulations as the man in the midst of a crowd of five thousand. It will be agreed, however, that excitement runs higher in the vast throng than in the smaller body. We must therefore find some explanation, other than facilitation through social stimuli, to account for this dependence of crowd excitement upon numbers. A number of references have been made to the attitude assumed by the individual when he knows that he is in the presence of a large company. This situation is more complex than that of the small crowd with actual all-to-all contacts, the form of the response being largely determined by a central adjustment in the individual's nervous system, as well as by the external stimulations which call it forth. In terms of behavior we may say that the individual reacts to stimuli which he actually receives *as if* they were coming from an enormously greater number of individuals. In terms of consciousness he imagines that the entire vast assembly is stimulating him in this fashion. He has mental imagery — visual, auditory, and kinæsthetic — of a great throng of people whom he knows are there, although he does not see them. These people

moreover are imagined as reacting to the common crowd object. There is vivid visual and motor imagery of their postures, expressions, and settings for action. We have already seen that there is an attitude to react as the other members of the crowd are reacting. There must of course be some *evidence* of how they are reacting in order to release this attitude. In default of evidence through stimulation (as in case of those concealed from view) mental imagery supplies the necessary clues.

This fact has been well stated by Dr. W. D. Scott in the following introspective terms: "If the speaker has presented an idea in the form of a mental image, and I am a member of the crowd, the idea then seems to be presented *to each individual*, for I feel that each of them is thinking the thought and seeing the picture just as the speaker presented it, and hence it is in a sense presented to me by all of those present. Since the idea as presented is assumed by me to be accepted by all present, it would seem absurd for me to question it." [1] It will be convenient to speak of the attitude of responding as if to a great number of social stimuli and the accompanying imaginal consciousness of the crowd's reaction as the *impression of universality*.

Social Projection. A further imaginal factor is revealed in the behavior of the individual in the crowd. Whence comes this impression that the entire crowd is accepting and acting upon *the suggestions given by the speaker?* Why does the individual suppose that the attitude of those whom he cannot observe is favorable rather than hostile to the words uttered? The sight of compliance in one's immediate neighbors in part affords an impression which is extended to the entire crowd. The mere fact that the speaker is known to have prestige also counts. But a further explanation probably applies here. It may be stated as follows: As we catch a glimpse of the expressions of the others we 'read into them' the setting which for the time is dominating us. This tendency is true of all perceptions under the influence of a special attitude. *We ourselves accept and respond to the words of the leader; and therefore we believe and act upon the assumption that others are doing so too.*

[1] *The Psychology of Public Speaking*, p. 178. Quoted by courtesy of the publishers, Messrs. Hinds, Hayden and Eldredge, Inc., New York.

The attitude and imagery involved in this reference of self-reaction to others we may call by the figurative term, *social projection.*

In crowds social projection and the impression of universality work hand in hand. To feel fully the presence of the multitude we must realize an identity between their behavior and ours. The response which we imagine to be universal is a 'projection' of our own response. By a circular effect, moreover, this same response comes back to us with all the reinforcement that large numbers bring. The sequence is therefore as follows: (1) we react to the common object of attention; (2) we assume the attitude and belief that others are reacting in the same way, and interpret their expressions so far as seen with that meaning; and (3) our response is increased all the more because of this (assumed) agreement and support of the others.

A few illustrations from daily life will give a clearer notion of the imaginal and attitudinal behavior we are discussing. In conversation one who makes a telling remark often laughs, raises his brows, or shows by other expressions that he is conscious of having deeply impressed or startled his interlocutor. Such consciousness may be, and often is, wholly fallacious. The speaker is so absorbed in his own enthusiasm that he misinterprets the response of the other to indicate a fuller sympathetic agreement with his own reaction than really exists. This is a special instance of the attitude of social projection. The impression of universality, if we may so call it when only two are concerned, becomes in this case an *illusion of universality.* The bashful youth 'projects' his intense consciousness of himself into those about him and thus becomes embarrassed or timid. The swaggering individual and the adolescent, holding personal conversations in a loud tone of voice, regard others as sharing the admiring or sympathetic interest which they feel in themselves. Facial expressions and postures of others are often wrongly interpreted by us as signs of the same emotions we are experiencing. As a boy the writer was harassed by the belief that other people, through some telepathic process, were aware of his inmost thoughts. In certain types of insanity unconscious and dissociated thought reactions are projected to others, so that the patient does not recognize them as his own, but alleges that they

are the ideas or accusations of others concerning him. This is the 'projection' of psychoanalysis. We shall return to it in Chapter XIV.

The Crowd Attitudes and Public Opinion. Psychologically speaking, 'the public' means to an individual an imagined crowd in which (as he believes) certain opinions, feelings, and overt reactions are universal. What these responses are imagined to be is determined by the press, by rumor, and by social projection. Impressed by some bit of public propaganda, the individual assumes that the impression created is universal and therefore of vital consequence. Thus the impression of universality is exploited and commercialized both on the rostrum and in the daily press. Newspaper columns abound in such statements as "it is the consensus of opinion here," "telegrams [of remonstrance or petition] are pouring in from all sides," "widespread amazement was felt," and the like.[1]

In one of our large cities a great ado was created recently by the sensational newspapers in the interests of a reduction in street-railway fare. A petition to the Legislature for lower fares was circulated and a large number of signatures secured. The newspapers meanwhile magnified the public coöperation by editorial, article, and photograph. The names of petitioners were affixed, not to the pages of a book, but to a roll which when unwound would form "a document a mile and a half long" and which "could be wrapped around the State House many times." This "remarkable document" was "rolled on a giant reel," and hauled to the State House "in a truck" (although a single man with a wheelbarrow would have sufficed). Notwithstanding this great array of names, secured and exaggerated through the illusion of universality, no facts or figures were produced in support of legislative interference with the existing rate of fare. The whole movement was a piece of newspaper and political propaganda. And the "remarkable document" was laid upon the table.

[1] Some speakers, in order to disarm the critical and avoid argument, prefix their statements by "it is generally conceded that," or similar remarks. This, as Professor Pillsbury indicates, is usually an exaggeration, and sometimes a direct falsehood; but it produces in the unwary an illusion of universality and consequent submission to the opinion of the (imagined) public. Cf. W. B. Pillsbury: *The Psychology of Nationality and Internationalism*, p. 201.

Once during a visit of General Pershing to Boston there appeared a newspaper article inspired, perhaps, by a discontented faction of World War veterans. The following quotation will show the attempt of its author to magnify the personal grievance to one of civic interest. (Italics are by the present writer.)

The controversy *which has been raging* since the refusal of certain YD leaders to attend the mayor's banquet at the —— this evening [30 out of 300 invited refused to come] *has accentuated interest* in the general's coming, and *Boston is perhaps more concerned over the character of the reception accorded him than in whatever he may do or say while here.*

The reader who is not on his guard is likely to be seriously misled by journalism of this character. The allusion to the 'concern' of large numbers produces an unthinking belief in the importance of the statements made. The artifice, however, seems obvious enough when we pause to inquire how the reporter could possibly have known what Boston as a whole was 'concerned over.'

The same deception lurks in flaring headlines. Our eye is caught by these 'scare-heads,' and we say to ourselves unconsciously: "This is big news: it is printed large to attract universal attention. Hence every one else is looking at it as I am doing. That which everybody is interested in must be of great importance."[1] And we proceed, ready to be duly impressed with what follows. Newspapers which capitalize the illusion of universality in this way unfortunately have little to say that is fit to read. But the unscrupulous and sensation-hunting journalist has scored in securing attention and in controlling a portion of public opinion through social projection and the illusion of universality.

Special Mechanisms for the Release of Prepotent Reactions in Crowds

Allied and Antagonistic Responses. Resolution of Individual Conflicts in the Crowd. In our discussion of social facilitation it was pointed out that the responses of the individual were augmented through the presence of the other crowd members. But the change

[1] We have, of course, no *articulate consciousness* of this sort upon seeing large headlines. These words are intended merely to convey what is implied in our *attitude* at that moment.

is not solely in the speed and strength of reactions; there is a qualitative difference as well. In the crowd the individual becomes more drastic and violent in carrying out his prepotent impulses than under other conditions. Extreme measures such as destruction of life and property — measures from which the individual would shrink with abhorrence when acting alone — are employed and regarded as justified. This release of the crowd man from the usual moral restraints forms a special problem to which we must now give attention. Let us begin by considering a typical case.

In a comparatively recent strike of coal miners in a Middle-Western State a mob of armed strikers raided the company's property and seized forty or fifty imported, non-union workmen. The intention was to force them to march ahead of their column exposing them to ridicule and abuse through the streets of the mining settlement. Before they had gone very far, however, the shouts of rage from the strikers became so violent that those marching at the head advised the 'scabs' to fly for their lives. This they did, taking to the fields and woods on either side of the road. One of the strikers fired a shot, and immediately the column broke, pursuing the fugitives in all directions and shooting them down without mercy.

This massacre was an immediate expression of the struggle response unmodified by social considerations. Any object which thwarts movement or which opposes prepotent demands for food and sex, and for the safeguarding of love interests in the family will evoke this sort of struggle. Such were the vital interests of the strikers which they felt were at stake in their industrial conflict. And the enemies who were, as they conceived, most active in threatening these interests were the non-union workmen; hence the powerful drive to crush these intruders. We may call this the *egoistic (or unsocialized) drive.* It was present in each striker. From the moment the 'scabs' were imported there was in each striker the neural setting to drive them out, or if necessary to destroy them.

But although each individual previously to this incident had felt the desire to attack the intruders, he did not do so. There were two reasons for this. The first was fear, that is, the response of

withdrawing from any contemplated act which would cause him still greater suffering through punishment. The second reason, a deeper one, was that he had been taught from infancy to respect the lives and property of others. Even if there could have been no possibility of punishment, it is not likely that any single striker would have murdered one of the non-union men in cold blood. Long-standing habits of respect for others and aversion to acts socially regarded as crimes are too strong for this. We may call this restraining attitude the *socialized drive.*

One phase of early habit formation is of special importance in the present connection. When the child plays with fire, or is otherwise careless with dangerous objects he is likely to be hurt by these objects themselves. He thus learns to withdraw from acts or objects which punish him by the laws of nature. When, however, he lies, steals, destroys property, or injures playmates, his elders play a necessary part in the punishing process. Social law, rather than natural law, will, he soon learns, punish him for these acts. It is an absolute rule that in the early stages of this moral training *other human beings are present and inflict some form of punishment accompanied by reproving words and expressions.* Withdrawal from antisocial acts therefore begins as a prepotent response (withdrawal from pain of chastisement) *conditioned by the presence and reproving behavior of others.* As the child grows older teachers, playmates, and friends take the place of parents as punishers and inhibiters of antisocial conduct. Finally it is the community at large, and the imaginal consensus of public opinion, which by reproving attitudes forbid the participation in crimes against others. Throughout life therefore, as in childhood, the real or imagined presence of others and their expressions of disapprobation remain the necessary conditions which restrain us. Inhibition of misconduct toward others is founded upon social disapproval.

In the heightened emotional facilitation of the mob, such as that preceding the massacre of the workmen in our illustration, the egoistic drive of each individual is brought into the sharpest antagonism to this socialized drive. The struggle for satisfaction of personal needs is pitted against the powerful habit of regard for law and human life. The striker wishes to destroy the non-union

worker; yet he does *not* wish to destroy him. Since one cannot both kill and spare at the same time, a point of tension is reached in the crowd at which a slight added stimulus may decide the issue.

The crucial moment arrives when the first gun is fired or the first blow struck. The individual then sees with his own eyes that others are delivering the blow that he longs to deliver, and are thereby expressing, not disapproval of acts of violence, *but the strongest kind of approval.* In the face of this it is impossible still to cling to the imagined disapproval of society at large. The crowd in flesh and blood, a more concrete evidence, is immediately and unthinkingly substituted for public opinion in general. By this stroke the entire support upon which the inhibition of violence had rested is cut away. Social disapproval has been converted before our eyes into social approval. That which had been an inhibition to killing the 'scabs' now becomes a facilitation; an attitude antagonistic to the egoistic drive has become an allied one. The drive to kill or destroy now spends itself in unimpeded fury.[1]

The Moral Consciousness of the Crowd Man. Justification of these acts in the *consciousness* of the individual follows a course parallel with the release of the egoistic drive. All doubt or worry as to one's course of action disappears when one finds one is acting with the other members of the crowd. The fact that others approve of what one wants to do by doing the same thing themselves gives a comfortable sense of moral sanction. The experience of relief is like that of the boy who, having gone swimming or eaten the jam in the face of the sternest parental injunction not to do so, suddenly finds that his mother did not care very much after all. The atmosphere clears in similar fashion when one's egoistic drives are sanctioned and released through crowd stimuli.

The moral consciousness of the individual in mob violence develops somewhat as follows: (1) "I could do this thing which I want to do as a member of a crowd because no one would observe me, and I would therefore escape punishment. (2) Even if I should be detected, no one could punish me without punishing all the

[1] A sharp contrast is here presented with the common view that in a crowd all personal identity is lost and individuality 'wilts.' In the sense of freedom from restraint upon his egoistic drives a man becomes far more individualistic in his behavior in the crowd than when acting alone.

others. But to punish all would be a physical impossibility. And (3) more than that, it doesn't seem possible to punish a crowd, because that would be making a large number of people suffer. And that is unjust: it is the interest of the many which must always be safeguarded. Hence (4) since the whole crowd show by their acts that they wish the deed to be done, it must be right after all. So large a number of people could not be in the wrong. And finally (5) since so many people will benefit by this act, to perform it is a public duty and a righteous deed."

Words are soon found in which to rationalize the injustice of the mob's action, and none of its participants raises a question. "They got what was coming to them: they tried to steal our jobs," was the remorseless statement of the striking miners as they surveyed the bodies of their victims. Where the struggle group is large and the impression of universality strong, the sense of moral justice is exalted to the plane of the heroic. Members of hooded mobs are impressed with the 'patriotism' of their self-justified acts of violence. The commander who sank the Lusitania received a medal expressing the admiration of the German nation. Revolutionists have put men, women, and children to death upon no further charge than that they were (or might have become) "enemies of The People."

Crowd Ethics in Vocational and Fraternal Groups. The formula that whatever all the members of the crowd do is right is carried over into the various *imaginal* crowds, or 'publics,' to which individuals belong. If, for example, a tradesman finds that certain practices which he would like to employ, but which are against his ethical training, are used widely by his fellow-tradesmen, he is apt to reason, like the individual in the crowd: so many do it, therefore it must be right. He substitutes his particular trade-class for society at large, just as the crowd member takes the action of a few individuals about him for an expression of the entire body politic. This impression of universality is, of course, an illusion; for the conduct sanctioned carries out what the individuals of the crowd concerned wish to do, but violates the interests of the rest of society.

Class-made morals are one of the greatest enemies to that broader view upon which the theory of democracy is based. The ethics of

the few sanctions injustice to the many. The reporter will not 'write any man up' unless he refuse to provide the desired information for publication. Should he withhold this, it is right (since all reporters follow this practice) to expose him to public abuse or ridicule. Religious denominations and fraternal orders show this tribal tendency in their moral codes. A double standard of justice is set up for the 'insiders' and the 'outsiders' of the group concerned. The Bolshevist argues that it is right for him to send bombs through the mail, because he does it in the interest of the masses (his faction), and the capitalists have usurped all other agencies through which the rights of 'The People' can be asserted. There is, of course, honor among thieves; and even prostitutes have their codes of ethics.[1]

Martin's Principles of Crowd Behavior. Mr. E. D. Martin, in a suggestive book, *The Behavior of Crowds*, has applied the Freudian psychology to elucidate special mechanisms of release through crowd channels.[2] The main thesis may be expressed in his own words as follows: "In the crowd the primitive ego achieves its wish by actually gaining the assent and support of a section of society. The immediate social environment is all pulled in the same direction as the unconscious desire."[3] And again: "The crowd is always formed for the unconscious purpose of relaxing the social control by mechanisms which mutually justify such antisocial conduct on the part of members of the crowd."[4]

This statement does not differ fundamentally from the account we have given above. But through calling attention to repression and the *unconscious* operation of egoistic drives Martin has been able to present in a novel fashion many of the characteristics of 'crowd behavior.' The neural antagonism which we have observed

[1] The writer knows of a girls' school, held in a residence building, which was burglarized one night, and a number of valuables taken. A few days later the principal received a letter containing the stolen jewelry, and explaining that the burglar "never intended to rob ladies," but thought he was in the home of one of those "damned idle rich!"

[2] This book should be read by every student of psychology or the social sciences. The quotations here included are reprinted by courtesy of Messrs. Harper and Brothers, publishers. (*The Behavior of Crowds*. Copyright 1920, by Harper & Brothers. All rights reserved.)

[3] Page 35.

[4] Page 231.

between the egoistic and socialized drives often goes on in unconscious terms. It resembles that class of neurotic and paranoid symptoms studied by modern psychopathology.

The real motives for the actions of crowd members are not recognized, because they are antisocial. There are substituted rationalized motives, high-sounding abstract terms, and other 'defense mechanisms' in order to keep up the appearance of high and unselfish ideals. Attention, as Martin says, is focused upon the abstract and general thus permitting the actual concrete and selfish causes to function unconsciously. The changes rung on the word 'liberty' illustrate this tendency. Whatever the partisan of any class may be fighting for, he is apt to fight for it in the name of liberty. Radical groups have recently borrowed the time-honored slogan, 'Political Liberty,' and have converted it into 'Economic Liberty.' For a man to be free economically would, in the sense intended, mean that he would be free to consume as much of the wealth of the world as he chose. No one would be able to place a curb upon his consumption by securing more goods than he. This real motive, obviously primitive and selfish, cannot be admitted in these bald terms. A fine phrase, such as 'Economic Liberty,' is demanded. The crowd members are thus buoyed up by the exalted fiction that their intent is altruistic and even patriotic. In a similar way a group of aid-seeking War Veterans who were trying to secure the passage of a bonus bill substituted for the word 'bonus' the more idealistic phrase 'Adjusted Compensation.'

The very existence of the crowd depends upon its members being unaware that the crowd principles are only pretenses. The disguised motive must remain hidden from consciousness, or all sane individuals will at once recognize it and the illusion will be dispelled. This is the reason for the notorious *intolerance* of crowds. The good crowd man clings to the fictitious crowd slogans as a psychoneurotic person clings to his defense reactions. The hidden motive, or complex, is jealously guarded; and violent anger is shown toward all who threaten to discover it.

The *hatred* of crowd members is based upon a similar mechanism. By having an enemy to struggle against the crowd man strengthens his own cause. He is fighting against injustice and oppression;

therefore he is fighting for the right. It does not matter if this hatred has to be elaborated as a pretense, so long as it is hatred. One of the commonest devices is unconsciously to 'project' into others the hidden motives that we ourselves possess (cf. p. 307). This accomplishes a double purpose: first, it provides some one to attack, and secondly, it conceals the true motives the more completely by showing how righteously opposed one is to people having 'such base purposes.' The German military party thus charged France and England with a conspiracy to conquer Germany and restrict her national life through control of the seas. The real motive behind the charge was the desire of *Germany* to conquer Europe and possess a maritime power equal to that of England. One of the favorite practices of present-day radicalism is to make itself appear the victim of all manner of oppression. A leaflet was recently circulated by the I. W. W. headquarters describing twenty-nine ways in which their members had been unjustly persecuted. References are frequent in these groups to their 'economic oppressors,' and to their 'beloved leaders' who are languishing in prison through the injustice of a capitalistic régime. Through hatreds of this sort crowd members fortify their belief in the absolute righteousness of the crowd principles.

Another interesting release which the crowd situation provides is an *exalted attitude of self-importance.* The opening words of the conventional public address contain a note of flattery to the audience. 'The privilege of addressing so distinguished a body,' or an equivalent phrase, is so common as to be considered good form. The members of the audience always respond favorably to such a tribute. It does not offend their modesty or good taste; for each one considers that the remark pertains to the crowd as a whole, and his own exaltation consists in being one of that remarkable crowd. Taking pride in one's group is a socially justifiable means of feeling pride in one's self. Crowd members for this reason can be cajoled with flattery of the most obvious type.[1]

[1] The following excerpt from a student's description of a crowd at a boxing contest will illustrate this point (italics by the present writer): "Just before the main bout the announcer made an appeal for a collection for the 'starving babies in Russia,' ending with, 'I am certain the largest collection ever made in the arena will be taken here to-night.' *With that a big exalted feeling went through the crowd.*

It is, of course, true that the principles just described are not applicable to all crowds. In many instances there is nothing unconscious about the drives or the conflicts which they engender in individuals. In the strike riot, for example, the reactions are of the simple, undisguised, prepotent variety. The conflict is 'out in the open'; hence there is no defense against the recognition of motives. Yet it must be acknowledged that Mr. Martin has made a valuable contribution to the theory of crowd influence. Through his efforts many of the long recognized phenomena of behavior in crowds are brought before us with a new and deeper significance.

Summary. The reaction of the individual in the crowd is a primitive, unsocialized response. In mob violence it is for the immediate satisfaction of the demands of defense, hunger, or sex. Most crowds are struggle groups, resisting, often by violence, any limitation placed upon the individual members in regard to their fundamental needs. The deeds of crowd members are not rationally controlled, because the thought process in crowds is used only to *serve* the prepotent interests, and not to direct them. Hence the crowd thinking of the individual takes the form of rationalization, fine phrases, intolerance, and accusation, reactions which conceal the true egoistic nature of the motives at work. Crowd struggle requires some one to struggle against. Its normal enemy is the hostile crowd or agency which is thwarting the desires or activities of the crowd members. In instances where the thwarting is due rather to circumstances than to human beings some enemy is *found*, and hatred developed against him in order to justify the crowd in getting what its members want by force.

The heightening of action and emotion in crowds is due largely to social facilitation through the expressions and movements of others. These movements must be of the same nature as those which the *individual himself* is set to perform or is actually performing. The attitude of submission to large numbers and consequent obedience to suggestion help in the release and augmentation of the prepared responses. The suggestibility of the crowd

Every one gave, including the writer, who was affected much the same as the others." Note also the excellent illustration of social projection and the impression of universality so naïvely given in this incident. How could the writer possibly know that an exalted feeling went through the crowd, or, for that matter, that every one gave?

member is extreme, and his consciousness is filled with the suggested object or action to the exclusion of all else. Facilitation through social stimuli in the crowd is increased by the eliciting of expressive behavior from the individuals, and by so arranging them that they stimulate one another with maximum effect. Circularity of social behavior obtains among the individuals of an audience-crowd and between the individuals and the leader.

Parts of the crowd not actually seen or heard, as well as the 'general public,' are represented by imaginal consciousness and attitudinal settings in the individual. We respond *as if* stimulated by the present but unseen members of the throng. We thus have an 'impression of the universality' of a certain response, without adequate sensory evidence of its universality. 'Projection' of one's own consciousness and attitude into others, with resulting reinforcement in one's self, is common in such situations. It may lead to an 'illusion' of universality.

A result of the submissive tendency of the crowd member is an increase in his conservatism. He is reluctant to oppose either the present or the past edicts of his crowd. This conformity is further maintained by his intolerance of any member who criticizes the crowd-principles, or who otherwise threatens the disclosure of the egoistic motives they conceal.

The violence of action in crowds is explained partly by social facilitation combined with the removal of individual responsibility. The chief mechanism, however, is the converting of social agencies which have heretofore been *inhibitors* of aggressive action into allied stimulations which *facilitate* such responses. Morality and self-restraint are acquired through the approval and disapproval of society. In the climax of excitement and anger the individual substitutes the crowd he is in for society at large. Blows which he sees his immediate neighbors strike are considered by him to express universal social approval of the deed. The acts of crowds are, therefore, regarded by their members as morally necessary and right. They are in fact heroic acts; and the abstract principles in whose name they are committed are absolute and eternal.

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CHAPTER XIII

SOCIAL ATTITUDES AND SOCIAL CONSCIOUSNESS

General Social Attitudes. In a foot-race the runner becomes 'set' on his mark ready to spring forward at the signal. At the same time all possible movements not allied to this act are inhibited. A certain neural and muscular adjustment is established which determines the character and speed of the following response. We have likewise found on several occasions that to understand social behavior we must consider not only the stimulus and response, but also the *preparations for response* set up in the neuro-muscular system. Upon coming into the group or crowd attitudes are assumed for characteristic modes of behavior. Certain types of action are thus determined, and others inhibited, at the start. We are set, for example, to conform in our reactions to the conduct of the others. In thinking, we expand our range of associations to objects about us; and we tend to impress others with our conclusions, rather than prove them in a logical fashion. We set ourselves for rivalry, auto-competition, or coöperation, and are affected accordingly in our work. We even assume an attitude to react *as if* certain imagined social stimulations were present. In all these instances the attitude, or preparation in advance of the actual response constitutes an important determinant of the ensuing social behavior. Such neural settings, with their accompanying consciousness, are numerous and significant in social life. The present chapter will be devoted to their study.[1]

There is a general social attitude more universal and permanent than the ones we have just mentioned. The latter refer to particular tasks or situations in which we mingle with others. We have, however, a prepared set for responding in the presence of *people as such*. The mere presence of a fellow being determines us to a more selected and controlled group of reactions than when in the freedom

[1] For an additional account of attitude, review the discussion of suggestion in Chapter X.

of solitude. We must refrain from taking up the whole road or from monopolizing the comfortable seats. We tend to perform small services of a polite sort, and perhaps to communicate briefly with our fellows. Certain barriers are set up against the unrestrained use of language or emotional expression. Primitive tendencies in regard to sex and other matters for which convention demands privacy are held in abeyance. In short we adopt a bearing of courteous, socialized dignity; and this attitude determines the character of the things we do or say.[1]

This complex attitude is seldom present in consciousness, but it may be readily verified by the following common experience. If, after entering a room and going about our affairs under the impression that no one else is present, we chance to look over in a corner and see some one sitting, we are startled often to the point of exclamation. This starting is not merely the effect of the unexpected; for it is often natural to suppose that another person might be in the room. It is due to the sudden occurrence of the stimulus for assuming *the general social attitude* (inhibitions, controls, etc.) mentioned in the preceding paragraph, and to the neural conflict with the freer reactions already in progress. The abrupt shifting of motor settings is disconcerting. In such a situation we often reflect hurriedly upon what we have just done in order to assure ourselves that it was not undignified, unconventional, or otherwise at odds with the general social attitude. Preparation for response to persons, as distinct from response to things, is therefore fundamental in behavior.

Attitudes toward Specific Groups. Upon entering the presence of various groups we assume specific attitudes which control our responses in appropriate ways. Words heard in church arouse in us altogether different responses than the same words heard upon the street or in the club. Our immediate personal settings adopted in primary groups are inhibited by the formal attitude assumed when in a parliamentary body. We are set to react to the book agent in

[1] In conversation we often experience an emotional tension, a kind of 'visceral glow,' and a hyperkinetic activity level. We feel that we have been 'playing up' to the social environment. A sudden kinæsthetic drop in tension is thus felt when the guests have departed, or when we are walking with some one and a parting of the ways abruptly ends an animated conversation.

a manner very different from our reaction to a social caller. Agents sometimes capitalize this fact by simulating a caller at first, thus establishing in us an attitude of friendliness from which it is difficult for us later to withdraw. Our teachers, ministers, colleagues, merchants, and servants all derive their impressions of us from distinct attitudes we assume toward these classes respectively. We ourselves feel that it would be highly improper for us to confuse these attitudes. These varying aspects of our behavior are sometimes called different 'social selves.' The term 'self' thus employed is, however, vague and misleading; for it is not a *self* whose conduct is here observed, but only a segment of our habitual attitudes and reactions.

Self-Expressive Social Attitudes. There is a fairly universal readiness to communicate to others thoughts or feelings which we regard as significant. We are usually aware that the information will produce a sensation, create a laugh, impress the hearer with our own importance, or otherwise control the reactions of our fellows (cf. p. 287). Differences in personality are of course operative in this reaction-getting tendency. Ascendant, expansive, and rivalrous students speak up continually in class, while the more submissive often want to do so but dare not.

The same attitude exists when the group is not immediately present. When we have a bright idea or think of a joke we wish to go and tell some one. The scholar often meditates upon putting his thoughts before the public in an article or book. We want to see the direct effect of our action upon others. If we are of the day-dreaming sort, we are apt to imagine that our words and deeds are convincing others or evoking the plaudits of the throng, and in that way derive an innocuous satisfaction. A familiar example of self-expression is the annotating of one's books with critical comments. In many cases the attitude is again *as if* the author were there to see, and the mental imagery is that of orally telling him what one thinks. A student writes his views in library books, not only as a reaction to the author, but to impress other students who may later read the same book. Later on another student writes his comment below, ridiculing not the author but the first commentator. Then follows another, the thought meanwhile degenerating

to a personal level. No actual contact is made by any annotator with any other; but social attitudes and imagery are sufficient to bridge the gap. In every college library may be found textbooks embellished with such anachronistic conversations.

In this connection should be mentioned the writing of names and personal views in public places. We long also to place our mark upon tops of high towers or mountains, or in distant historic spots. Books, 'benefit blankets,' and sofa cushions are autographed by us upon request. Few people object to recording their names in the visitors' register at places of public interest.

Attitudes toward Specific Persons. In addition to the general social attitude and the attitudes toward different groups or classes, we show also prepared responses toward specific individuals. Whereas we behave toward all chairs in about the same manner, and have certain common reactions for all dogs or all horses, we possess for each *person* of our acquaintance a highly specialized pattern of responses. The person himself, and the overt behavior traits of his personality, comprise a unique group of stimulations, evoking from us a reaction pattern different from our response to any other individual. One man compels our respect, admiration, and submission to his suggestions. Another arouses hatred and aversion, but also fear. Still another makes us contemptuous, or by his weakness invites our own responses of expansion and self-display. Some persons we must compel, some we seek to win, and others we strive merely to impress. One individual is our rival, another the object of our amorous desire, another our sympathetic confidant or advisor, and another is the one with whom we are most likely to stop and exchange jokes.

Toward no two persons are these behavior patterns identical. We must realize also that this personal behavior is represented, like other social reactions, by an advance preparation. There is a complex attitude which we assume upon coming into the presence of a particular acquaintance. *We have become set to react to just that person* by responses similar to those described above.

Recognition of a person is the assumption of just such a specific social attitude. We recognize an individual when we know how, on the basis of past experience, to react to him; that is, when we

set ourselves for a specific pattern of reaction. Recognitive attitudes are often assumed with amazing swiftness, and upon the basis of the slightest sensory cues, such as shape of the back of the head, stoop of the body, or hang of the clothes. Mistakes in recognition are therefore frequent. When on the street we sometimes think we see a certain acquaintance coming and then avert our eyes until within speaking distance. If we have made a mistake in the person, we then discover it suddenly and when face to face with the individual. The effect is generally disconcerting, and we sometimes have an embarrassed consciousness that the other is aware of our confusion (social projection). The unpleasantness of this experience is largely due to the fact that as we drew near we were unconsciously assuming a specific attitude for greeting the supposed acquaintance. These prepared reactions were then suddenly blocked by discovery of the error; hence the visceral outlet in emotional confusion.

Another evidence of specific social attitudes is seen in the personality adjustments of correspondence. A letter written for one person by another never sounds exactly as it would if the former had written it. Apart from content, apart even from style, there are subtle modes of address, fine shadings between command and request, touches of familiarity and jocularity which are peculiar to one's relation to a specific correspondent, and which no amanuensis can duplicate.

Attitudes based upon the Behavior of Others toward us: The Social Self. We have so far discussed but one side of the attitudinal relations of individuals. It must not be forgotten that in social life the response to one's fellows forms a stimulus to which they in turn respond. Consequently each person toward whom the individual has prepared responses has also definite attitudes toward him. It makes a great deal of difference to us, moreover, what *sort* of attitudes our fellows assume. We strive to build up in them those settings *which we wish them to have* toward us. Furthermore, when such attitudes are established we strive to keep them as they are.

We are hemmed in in our behavior by the manner in which others show they expect us to behave. We contribute to charities, enlist

for military service, and attend church largely because our associates expect us to, or because we want them always to assume that we shall react in a charitable, patriotic, or pious manner. Stated in introspective terms, we are conscious of what we infer to be in the consciousness of others concerning us. Our consciousness of ourselves is largely a reflection of the consciousness which others have of us. This introspective phase of self has been aptly termed by Professor Cooley the "looking-glass self." We shall refer to it hereafter as the *social self*.

My idea of myself is thus largely my neighbor's idea of me, or rather my own idea of my neighbor's idea of me. To this we may add that 'my idea of my neighbor's idea' is usually that which I *want* my neighbor to think; and hence may be an illusory social projection, a mental image rather than a reality. In this case the social self is the self which we wish and assume others to think we possess. The inter-relation of social attitudes is thus both complex and vital. Attitudes of others toward us whether real, supposed, or only wished, control both our self-consciousness and our personal conduct.

Behavior determined by the attitudes of others towards us may be conveniently illustrated under two heads: establishing the social self, and maintaining it. They will be discussed in order.

Building up Attitudes in Others toward us. Individuals differ widely in their craving for the esteem of society. In some, this drive is so strong as to lead to superficiality and posing. This is the type who ape the standard of living of the more wealthy, who dress for display beyond their means, and who feign superiority to menial work. Competition in the pursuit of fashions takes the place of a just sense of values. The aim is to impress and dazzle the throng without caring whether the throng is refined or vulgar, intelligent or stupid.[1] Others strive to build their social selves upon a worthier foundation. The good opinion is sought of those

[1] This tendency is well satirized in Synge's drama, *The Playboy of the Western World*. A young vagabond, running away from home, comes into a strange country and gains a kind of prestige among the simple-minded rustics through the rumor that he has murdered his own father. He enjoys this rôle of outlaw hero until the irate father himself appears upon the scene. In order to maintain his prestige (social self) in the minds of the peasants he sets about, though unsuccessfully, to commit the murder in earnest.

who count; and this may indeed be a limited class. Ideals of character are placed ahead of material display. The effort is to *merit* the esteem and reputation for culture which they wish to establish in the minds of their fellow men. Ambition for merited renown and intellectual leadership are thus constructive drives in the personality.

In most persons the building of the social self is a mean between the two extremes described above. Avoiding vulgar ostentation, we nevertheless pose a little. We are careful editors of our own narratives, elaborating the passages in which we shine, and censoring or extenuating the actions in which we appear to a disadvantage. This we do without consciousness of mendacity, distortion, or disingenuous motive. We believe for the time being that we *are* as we wish to have others see us.

The fact that individuals differ in the kind of social selves they achieve points a moral often overlooked. This moral is that our social self really originates in our own efforts to establish opinions and attitudes regarding us in others. The traits and possessions which we ourselves value we desire to place in the foreground of the consciousness of others in their evaluation of us. We may succeed in this, or only imagine that we succeed; but in any case our social self is no mere passive reflection of us from the minds of others. It is a social projection of our own personal ideals and aims. Our behavior accordingly is reinforced in the same direction, and objective personality traits become ingrained more deeply in response to the attitudes we seek to make others assume toward us.

Maintaining the Attitudes of Others toward us. The most remarkable fact about the social self is that once established it passes beyond the control of the individual. The attitude which others have toward us, that is, their expectation that we shall react in a given manner, tends to compel us to react in that manner. We feel that we must live up to our social self, or in some cases, perhaps, live *down* to it. The war hero and the famous man feel the necessity of playing an exalted rôle in their home town, because the consciousness of their achievements is perpetually evident in the attitudes of their fellow townsmen toward them. The girl who has lost her reputation for chastity finds the downward path an easy

one, because the community shows that it expects further lapses in her conduct.

In cases where there is a discrepancy between the social and the actual self every effort is made to keep up pretenses. We cherish our hypocrisies. We dread disillusionment sometimes more than death itself. This reluctance is naturally strongest where the disclosure would lower us in the public estimation. The struggle here is often a conflict within the individual himself. Subjectively it is a craving for honesty with one's self and the world struggling against the desire for social approval. This conflict has formed the theme of numerous works of literature. Ibsen's *Pillars of Society* and Zangwill's *Plaster Saints* are familiar examples.

When the *dénouement* finally comes and the sin has found us out the social self collapses like a 'house built upon the sands.' The protagonist is no longer buoyed up nor constrained to high purposes by the admiring attitudes of his fellowmen. Their good opinion and their expectation of greatness has changed into an expectation of meanness. There springs up in the individual's consciousness a new and baser social self. Unfathomable remorse and self-abasement form the climax of such a drama.

The foregoing considerations explain why repentance comes rather upon discovery than upon the actual commission of the misdeed. The experience commonly designated as 'conscience' is practically identical with consciousness of the social self. As long as the behavior of others toward us is of a respectful type it is difficult for us to feel ourselves worthy only of reproach. Disclosure makes us realize that attitudes toward us express no longer respect, but condemnation; and thereupon we feel the emotion of shame. A public official may without qualms of conscience hold his office and enjoy the respect of all while concealing a crime he has committed. As soon as a public disclosure is made, though it be years later, he resigns from his office with a sudden, overwhelming consciousness of guilt.

A more hopeful phase of the shattering of the social self is the possibility that it may be rebuilt upon a surer foundation. The collapse of undeserved prestige is a necessary condition for its reconstruction upon a basis of genuine merit. The noblest char-

acters are those whose social selves are laid upon a foundation of 'one hundred per cent' truth. Just as one lie leads to another, so hypocrisy widens the gap between character-fact and character-pretense, until nothing but the total collapse and shame of discovery can clear the way for a new start. In youths this process forms one of the most useful means of character building. In the early and plastic years the response to attitudes of others involves the formation of principles of conduct which time cannot alter.

The desire to preserve one's status in the attitudes of associates is not limited to a defense against the lowering of reputation. Even though the change of attitude would be in no way derogatory, we still hesitate to break up old habits of others toward us. If a person has for some time been under a wrong impression concerning us, we have a curious dislike in regard to correcting that impression.[1] It is unpleasant to disturb settled relationships and ways of regarding us, even for the sake of vindicating ourselves.

The same tendency shows itself in the reluctance to alter arrangements of our business and social life. Any sudden change in our person or habits which may disturb the expectations of our fellows is distasteful. The man who has recently shaved his moustache feels notoriously ill at ease until his friends have become accustomed to his altered appearance. When we have prepared for departure on a trip and have said farewell to our friends we do not like to meet them again before we start. It is awkward and even embarrassing to have to say good-bye a second time. Since our friend has considered us gone, at least so far as he is concerned, it seems inappropriate for us still to be present. A similar awkwardness is felt in making any sort of unexpected appearance before another. Some are loath to make calls without previous intimations. The guest feels more comfortable when announced or preceded by his visiting card than when making an unheralded entrance upon his host.

In almost every community there are long-standing enmities in which the original dispute has been forgotten, but the persons

[1] Those who have been mistakenly reported as dead, and duly mourned, have been reluctant, both in truth and fiction, to upset everybody by 'coming to life.' Numerous plots in fiction have been based upon the failure to correct mistaken identities.

remain estranged merely because each is too proud to break the ice.' Each party to the quarrel feels that the other expects him to behave as an enemy; and so he plays the hostile rôle until it becomes a part of his social self. In more temporary situations similar behavior is observed. Our facial expression and bearing sometimes assume a character to accord with the way in which others are at the moment regarding us. If we realize that we are suspected, although we may be perfectly innocent of the charge, we often find ourselves putting on a 'hang-dog' look, and even having for the moment a *consciousness of guilt*.[1] When some one expresses admiration for our courage we cannot avoid swaggering a little though we know the praise may be unwarranted. When some one plies us to divulge a secret which we are supposed to possess, but which in reality we know nothing about, it is hard to keep from assuming a wise and knowing expression. Responses such as these are immediate and involuntary. And, what is strangest of all, we have the *characteristic consciousness* for the time, of possessing the traits, the knowledge, or the status, which others are attributing to us, and this in spite of our certain knowledge that the attribution is false. Surely the control exercised by the attitudes of others upon behavior and consciousness is most pervasive and fundamental.

Social Consciousness. We may define social consciousness as the consciousness accompanying social attitudes and overt responses to stimuli. It is the *awareness* of the various social relationships we have been discussing. Considered in detail, it embraces the following: (1) consciousness of attitudes and of emotional and overt behavior toward others and toward society at large; (2) perceptual consciousness of how others are responding to this behavior of ours, or imagery of how they *would* respond if present; (3) consciousness, either in sensory or imaginal terms, of the *permanent* attitudes or overt behavior of others toward us (social self); and (4) sensory or imaginal consciousness that others are reacting to the same object or situation that we are, and that their response is similar to or different from our own.

[1] A lady of the writer's acquaintance received an anonymous birthday gift and proceeded to accuse her sister of having sent it. The latter immediately assumed a guilty expression, and remarked that she knew she looked guilty, but the truth was she had *not* sent the present.

The pattern of social consciousness is complex and subtle. Because of its omnipresence in our lives it is seldom clearly distinguished from other conscious data. It seldom attains focal clearness (that is, occupies our attention directly), but forms a vague background of daily experience, giving a social tinge to our feelings, thoughts, attitudes, and acts. It is so fleeting that it is difficult even for the trained introspectionist to analyze. A quick thrill of elated emotion is felt when we are the object of admiration, combined with fragmentary imagery or sensations of the admiring and submissive expressions of those about us. When tempted to commit some unworthy deed, a vague and fleeting panorama of mental imagery sometimes appears, composed of disapproving expressions of our fellow beings. This may be combined with the kinæsthetic experience of hanging our heads or cowering in shame. The impression of universality in the crowd experience, or in merely reading or contemplating matters of public interest, is carried in terms of social mental imagery. The awareness of our 'position in the community,' our 'sense of personal dignity,' and our 'honor,' all involve imaginative, emotional, and attitudinal consciousness of our relations with our fellow men. These are a few of the more typical forms of social consciousness.[1]

The Genetic Development of Social Consciousness and the Social Self. Although all accounts of the self and social consciousness of the infant must be speculative, there is good reason to believe that development in this respect is gradual. Various stages may be roughly distinguished. The first experience of self is probably gained through the earliest situations in which the baby reacts vigorously to the world about him. The prepotent responses, combined with the protopathetic emotion (p. 93), afford a basis for such awareness. Hunger is not an abstract, depersonalized experience; it is the baby's *own* hunger. Struggling against obstacles to movement brings to consciousness an array of emotional and kinæsthetic elements associated with the effort of the child to free himself. Such elements no doubt provide a distinct consciousness of self in opposition to the thwarting agencies.

[1] Other forms have already been described, such as the consciousness in the following: social facilitation (p. 279), projection (p. 306), rivalry (p. 281), suggestibility in crowd behavior (p. 304), moral reactions in crowds (pp. 312–13), and egotism in crowds (p. 316 and footnote).

This self, however, is necessarily limited to the bare activities in operation. The child distinguishes only between this struggling, hungry self on the one hand, and the 'not-self' or environment on the other. He does not distinguish between social and non-social objects in this environment. But before many months have elapsed the child's behavior shows a clear differentiation. Social objects are recognized and responded to in a manner quite different from the behavior toward non-social objects. The anger and hunger cries are used more specifically to control *human beings*. There appears also a new laryngeal response, the 'hurt cry,' as a remonstrance against oppression and an appeal for sympathy (see p. 181). Pleasurable responses such as those of feeding and responses to caressing and tickling are conditioned by human facial expressions, tones, and words which accompany these acts. The infant therefore adds these associated social impressions to the general consciousness of his own bodily states and activities.

With further development these responses to social stimuli and special controls of others acquire a new significance. Professor Baldwin and others have pointed out a stage in which the child is conscious of those about him, not only as sources of important and pleasant stimulation, but as selves similar to his own. Expressive behavior now acquires for him a new meaning. He is aware of what it means in terms of his own thoughts and feelings when he makes such expressions himself. The mechanism involved here is probably that of sympathy, or socially conditioned emotional response, described in Chapter X. Broadening of experience has also made the child aware that various states of feeling and emotion follow upon certain types of situations. The child who is familiar with the pain of a burn can sympathize with the same feeling when he sees another burned and observes the expression of pain. There is thus developed an awareness of an environment composed of selves similar to his own. This stage marks a distinct advance in the richness of the self-experience. It has been aptly, though figuratively, called the 'ejective stage' of self-consciousness.[1]

[1] One of the earliest signs of this stage is seen when the child is affected by the simulated crying of its parent. The sound of weeping, similar to that made by the

Ejective consciousness is of fundamental importance in human society. Its possession, according to Professor Washburn, not only distinguishes the child from the asocial infant, but places the social psychology of man upon a different plane from that of the lower animals. Instead of responding, like the latter, merely to the overt acts of his fellows, man is able to respond by sympathetic reaction to the evidences of their thought and feeling. It is possible therefore to establish permanent attitudes for our behavior toward others, attitudes based upon a standing knowledge of how others habitually feel and think concerning various matters. Upon ejective self-consciousness is founded therefore that stable regard for others which is the very basis of social life.

The development of awareness of the *social self* forms an interesting chapter in the history of the child. After a realization has come to him that the other members of the family are real selves, it is a short step to regarding himself as one of the family group and as a self recognized by the other selves just as he recognizes them. Language encourages this point of view, for the child is often addressed by his own name used in the third person rather than by the pronoun 'you.' (For example, "Does Helen want to play with her doll?" Or, "John is a naughty boy.") The child thus refers to himself by name (or sometimes by 'you,' when this form has been used in addressing him) long before he uses the pronoun 'I.' [1] This use of his own name is to be regarded not merely as a substitute for 'I,' but as an evidence that he is aware of himself largely as others see him. If he has been the object of continual parental admonition and concern, this tendency will of course be more pronounced. The writer's son at the age of three would often scold himself and deprecate his own conduct while at the same time performing the forbidden act. Examples such as the following were common: "Santa won't bring you any toys if you squeal like that"; or, while riding on his tricycle, "If you fall off, Edward,

child himself, has become a conditioner of the grief emotion which it accompanies. The response of the child to the pretended hurt cry of the parent is at first astonishment and then sympathetic grief.

[1] Since the word 'I' is not employed by elders in indicating the child, its use has to be learned by inference from its use by others to mean themselves. For the child to refer to himself as 'I' is therefore a probable indication that the elective stage of self-consciousness has been reached.

you'll hurt my knee"; and after tasting sour milk against his mother's advice, "Now, I *told* you that was sour." Evidently a large portion of the child's consciousness of himself is made up of the expressions used toward him by others. His self is largely a social self.

With further growth the discrepancy between the social self and the real self diminishes. Not only is the child aware of himself as his parents see him; but he wants to be aware of himself as they wish him to be. He refrains from the forbidden act instead of merely verbally abjuring it. The social self and the real self coalesce, and he becomes socialized. In this way the family, the church, and the school unite in building up the social self of the child in accordance with the ideals for which these institutions stand. Throughout life the individual carries with him the image of himself which he retains from the primary, face-to-face groups in which he was reared.[1]

Some General Aspects of Social Consciousness. The social consciousness accompanying contributory social stimulation offers a few points worthy of notice. We have already discussed the awareness that others about us are reacting as we are to a common stimulus, an awareness which is present in the impression of universality. Social consciousness of this sort arises whenever we are confronted by an object or situation which we realize at the same time is stimulating others. Printed slogans and public appeals of all sorts attain suggestive power because of the prestige of large numbers which comes into the individual's consciousness as he realizes that thousands are reading and reacting to these appeals as he is doing. War posters exerted a powerful influence through attitudes of this sort. The splendid coöperation which existed during the war reflected this consciousness of each that others were making patriotic sacrifices, and were expecting the same of him. The soldier as he marched in line was conscious of the others marching about him, of the fact that each was drilled as he was to execute precise movements upon command, and that each was marching along for the same purpose and toward the same goal as he.

[1] Cf. R. H. Gault (reference cited at the end of this chapter).

One of the laws of such social consciousness is that it is particularly strong when a command is given or when the group as a whole is directly addressed. If the speaker makes a personal appeal directly to his audience, a pleasantly exalted feeling is aroused in each individual. Each is impressed with the fact that every other is being addressed; and through thus calling the individual's attention to the group as a whole the social consciousness of each is increased. Physical contact, touching elbows, holding hands (a practice followed in some revival services), rising or singing in concert, and similar measures tend to produce the same effect upon the social consciousness of the individual.

Similar in effect to direct address is the giving of instructions and commands to a group drilled for the purpose. The writer can remember how at military training camp commands shouted by the officer were followed by vivid consciousness that the other soldiers were all hearing and obeying in the same manner as the writer. The change from marching in route order to marching at attention brought a tremendous experience, kinæsthetic and visual, of fitting in precisely with a great body of comrades who marched as one man. In executing the manual of arms this experience was particularly vivid, especially when the drill was conducted in entire regimental front. The tones of the Colonel's voice, faint in the distance, were impressive because of the vastness of the group upon whose ears they fell. Although the writer could see only a few men on his right and left, his imagery of long lines of troops extending far into the distance on either side, all executing the movements in unison with himself, is still fresh in his mind.

As a final example of the social consciousness we may mention that solemn and beautiful ceremony of the American Army, retreat. Standing at attention each soldier is proud to feel himself as one of an army and nation whose flag and whose anthem are thus to be honored. The impression of universality seems to each soldier to render his behavior a part of the response not only of his regiment but of the entire army, and beyond that of the nation at large, its ideals and its power. The exalted feeling of a participant in this ceremony is well described by Professor R. B. Perry in the following words:

Every late afternoon at the last note of retreat, the flag is lowered, and the band plays "The Star-Spangled Banner." Men in ranks are ordered to attention. Men and officers out of ranks stand at attention where they are, facing the flag, and saluting as the music ceases. Thus to stand at attention toward sundown, listening to solemn music sounding faintly in the distance, to see and to feel that every fellow soldier is standing also rigid and intent — to experience this reverent and collective silence which forbears to say that which cannot be said, is at once to understand and to dedicate that day's work.[1]

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[1] *The Free Man and the Soldier*, p. 82. Quoted by courtesy of the publishers, Messrs. Charles Scribner's Sons, New York.

CHAPTER XIV

SOCIAL ADJUSTMENTS

Conflict and Adjustment in Social Behavior. The social relations discussed up to this point have been relations of agreement or conformity. Sympathy, suggestion, social facilitation, release through crowd mechanisms, and the social self all work toward the same end as the drives and habits of the individual. But there is another phase of human relations. The demands of the individual's life frequently lead to acts which hamper the satisfaction of these demands in others or which run counter to custom and tradition. The result is social behavior of an antagonistic sort, in other words social conflict.

Two forms of conflict may be distinguished: the *overt* and the *covert*. The former is the more primitive; it results from the exercise of prepotent responses in their full strength and in a manner suited rather to immediate individual satisfaction than to the safeguarding of the social order. Conduct of others which thwarts these activities is countered by struggle responses of a primitive, unsocialized sort. Such overt conflicts occur frequently between struggle groups. Nations struggle against one another with methods of warfare designed by each for the destruction of the other's material and personal power. Revolutionists, strike rioters, and lynchers carry on an equally unsocialized conflict. In its absence of social modification this behavior resembles the ruthless attack of the angry child, differing from the latter only in a complexity of efferent development productive of more thorough destruction. *Within* the group predatory assertion of desires and the resulting overt conflicts are comparatively rare. Here both the assertion and the struggle against limitation of drives are carried on through the socialized agencies of rivalry, competition, and legal and political action.

Covert conflict is far more universal than the overt form. It is also more complex and interesting from a psychological standpoint.

In covert conflict the forces which represent the two sides of the conflict lie within the individual himself. To illustrate: A hungry man stands with a stick in his hand in front of a bake-shop window. He wishes to break the window and seize the food inside, but the presence of a policeman at the nearby corner restrains him. Two responses are here directly in conflict. One is the food-getting reaction to the hunger stimulus; the other is the withdrawal (accompanied by fear) from situations which entail punishment. In the overt or social form of conflict the man would try to seize the bread; and a struggle would ensue between him and another individual (the proprietor, or officer of the law). But the conflict is *covert*: it is within himself. The social aspect is represented in his own reaction system by an attitude of avoidance connected with anti-social acts.

Another example: A doctor is called to attend a man for whose wife he has a secret infatuation. The man is on the verge of death. By the use of a treatment known only to this physician the man's life can be saved. The doctor could easily fail to administer this treatment and thus let the man die without bringing any blame upon himself. There is here a conflict between the sex drive and socially conditioned humanitarian and professional attitudes, commonly known as conscience. Here again the conflict is not an overt one. It is not a struggle with another person for the possession of a desired object. The 'other person' is represented by the socialized habits within the individual; hence the struggle is between two antagonistic drives *in the same person*. Through socialization therefore the social conflict between separate individuals becomes a 'mental conflict' within the individual himself.

Of the two opposing forces in our second illustration one, the sex drive, needs no further explanation. The other, conscience, is a habit extending back into the earliest days of character building. The love (sensitive zone responses) of the child is early conditioned by the signs of approval and disapproval of the parents; and the deepest affective cravings are thus satisfied through continual *rapport* with father and mother. This *rapport* can be maintained only if the child performs certain acts, and inhibits others, according to the parents' wishes. Physical punishment also, as well as

loss of affection, conditions the withdrawal from antisocial conduct. Through such agencies the child learns to use the methods of satisfying his hunger and other cravings which are approved by society (cf. pp. 53, 60, 68–69). These he fixates as habits, and avoids less socialized, though more direct, methods. This training extends to a general regard for the social import of all that he does. Regard for the rights of others and for social duties is thus built up as a permanent trait of character.

Such sets of derived (prepotent) habits we may call the *socialized drives* of the individual (cf. p. 311). The more primitive, direct reactions may be termed the 'socially unmodified' or *unsocialized drives.*[1] Covert social conflicts arise between these antagonistic forms of reaction.[2]

Because of their concealed nature the full significance of covert conflicts has only recently been discovered. The credit for its discovery belongs chiefly to Freud. Although their main field of study belongs to psychopathology, conflicts are also of fundamental importance for the student of social science; for one force in the conflict is usually a socialized drive. Hence the struggle is really *a social conflict compressed into one individual.* Self and *alter* are antagonistic, not between one person and another, but within the person himself. The present chapter will be concerned with the origin of such conflicts, the social behavior through which the opposed drives obtain release, and the effect upon society at large. Broadly speaking this is the problem of the adjustment between the individual and society.

Clues to Inhibited Unsocialized Reactions. Although some persons go through life with very few overt social conflicts, hardly a day passes in the life of any one without some covert struggle between the socialized and unsocialized drives. Living in harmonious relations with others entails a sacrifice of some of our more frankly selfish desires. Our overt conduct must suggest a willingness to

[1] Cf. the egoistic (or unsocialized) drive referred to on p. 310 as a special example of this class of reactions.

[2] It must be remembered that all drives have the same ultimate source; that is, the reflexes described in Chapter III. For this reason the terms chosen are better than 'egoistic and altruistic,' words which convey a false distinction. All drives are egoistic in origin; their difference lies in the manner in which they are modified through environment and learning.

make such sacrifices; but the inhibited unsocialized impulse may be detected by a careful observer. For the sake of harmony members of polite society implicitly agree to overlook all evidence of such hidden feeling, provided the external form is in accord with good usage. The polite remonstrance and 'white lie' are not pried into too deeply. The social psychologist however has a more searching interest. Slight details of social behavior serve him as clues to a fuller understanding of these internal conflicts.

Personal dislikes which one attempts to conceal are revealed in characteristic ways. At the approach of a certain acquaintance we sometimes find ourselves crossing the street, or becoming interested in a shop window. Snubbing is a similar phenomenon. Those who practice snobbishness become so adept at 'not seeing people' that it is almost unconscious with them. Dislike and contempt are shown by the sudden loud laugh at the expense of the disliked person or class of persons (p. 256). Forgetting a name is, in many cases, the result of 'putting the person out of one's mind.' In shaking hands the manner may be perfunctory; and sometimes a slight repelling push of the hand can be detected. In feigning politeness to an unwelcome visitor the blank look and hesitant greeting give the lie to the effusive cordiality with which we immediately try to make amends. The character of the smile is similarly eloquent of blocked feeling: there is often something disagreeable about it. Slips of the tongue or pen to the disadvantage of the one secretly disliked may often be traced to an inhibited hostile attitude which seizes a moment of inattention to gain release.

The behavior just described is for the most part unconscious. The disguise which we offer to others we ourselves accept as the true state of affairs. If any one penetrates this and hints at our real motive, we are strangely angered. Such behavior is a kind of defense. Our very indignation is an argument that the too prying interpretation is false and unreasonable. It should be remembered that the conflict is within the individual rather than between two persons. Loosely speaking we may say that the individual deceives himself as to his underlying motives.

The repeated use of an apologetic or conciliatory phrase may

cast doubt on its sincerity, as the following true incident illustrates. A called B, who had been opposing him, into his office to impart to him the news that he (A) had been successful in accomplishing his purpose. Several times during the interview he expressed the hope that it was not "too much of a shock" to B, a statement which his thinly veiled triumph clearly belied. Extreme and unexpected friendliness of manner often betokens an unconscious correction for intentions of hostility. Nicknames afford a channel for releasing animosity or contempt without giving serious offense. They are familiar and therefore avowedly friendly; yet most of them are somewhat disparaging.[1]

Greed is another unsocialized trait which conflicts with the drive for social approval. Mistakes in addition are usually in favor of the shopkeeper, and this without any consciously intentional dishonesty on his part. If the merchant expresses indignation upon being told that his price is too high, one may, particularly if the complaint is just, suspect that he is trying to inhibit his own realization of the fact. A man called upon a creditor to pay a bill. The latter, wishing to appear generous, assured the caller that 'his credit was good' for as long as he wished to extend it. At the same time there was a swift glance of his eye toward the check as it emerged from the debtor's pocket.

The drive for self-display comes into frequent conflict with the socialized regard for modesty. A form of release in this case is to refer indirectly or impersonally to the merit to which one wishes to call attention. This focuses the conversation upon the desired topic and allows it to drift into more personal channels. The 'overseas' World War veteran who is itching to relate his exploits generally opens the discussion by the question, "Did you get across?" Politeness will then require his interlocutor to ask the same question of *him*. The following is a good example of the boasting conflict. The writer in a game of bridge had been for some moments inhibiting the temptation to call attention to his success-

[1] Many names of American Indians were derived from traits or events in which the person appeared to a disadvantage; for example, 'Sitting Bull,' 'Rain-in-the-Face,' etc. A certain humorous book proposes the term 'bripkin' for rustic characters who do not understand the ways of polite society. The amusing aptness of this name probably arises from its veiled similarity to 'bumpkin' or 'lumpkin.'

ful playing. Finally he remarked innocently to his partner: "Well, M——, one or the other of us must be playing a very clever game." One of the opponents laughed and said, "What conceit!" The writer thereupon expressed quick resentment of this 'unreasonable inference' of the opponent. This was, of course, a rationalized anger aroused as a defense against acknowledging the 'conceit' motive. It was finally pointed out that he should have said, "We both are playing a clever game." Not until this obvious *exposé* did the maker of the original remark become aware of the drive for self-display by which it had been prompted.

The Major Conflicts and their Social Adjustment. Turning from these surface manifestations we approach a deeper study of the forces which lie at the root of conflict. The main prepotent drives here concerned are two, namely, struggle and sex. The reasons for selecting these two are fairly obvious. Struggle against oppression or competitive thwarting is the response operative in overt social conflict. This overt struggle between persons must be mollified by developing socialized counter-tendencies within the individual. Without a curb upon anger struggles the social order could not exist. Such a curb within the individual's action system gives rise to covert hostility, or struggle, conflict. The sex response is important in conflict because it comprises the most intimate relation between individuals; and although one of the strongest of drives, it is subject to rigorous limitation and social control.[1] To these two sources of conflict may be added a third whose resolution or adjustment is of considerable social importance. This is the struggle against the realization of one's own defects, commonly called 'inferiority conflict.'

1. Struggle Conflict: Adjustments in Anger

The Introversion of the Struggle Response. Apart from socialization the original response when thwarted is to struggle with increasing violence until the thwarting agency is removed or conquered. The visceral side of this process underlies the emotion of anger or rage. Fear, early socialization of drives, and practical

[1] It is significant that hostility and sex are the two impulses stressed in Freudian theory as obtaining release through laughter (pp.256–58).

considerations inhibit this frank exercise of the struggle reaction. Outlet for it must be sought in indirect ways, such as competition or planning some revenge 'within the law.' Often the somatic response is inhibited completely, and there is no way of removing the thwarting stimulus or situation. In this case the hostility is said to be 'repressed.' This means merely that the struggle reaction is inhibited by drives or habits which are antagonistic to it and for the time being more powerful.

In such cases of blocked somatic outlet the visceral core of emotion is intensified since it is the only efferent pathway available for the release. The process may be described as an introversion of the struggle reaction. Its first characteristic is the increase of affectivity. The person's life becomes a succession of moods, of excitements and depressions. The effect of the visceral tensions is cumulative: it sometimes reaches the point of breaking through the resistance and becomes 'extroverted' into a response of unexpected violence. Such outbursts are the source of disharmony in social and domestic relations. Another result of introverted emotion is the play of mental imagery. One *imagines* that he is carrying out the violent attack upon his enemy which he has actually been required to inhibit.[1]

Types of Struggle Inhibition. In 1918, Dr. R. F. Richardson published a study of consciousness in anger, based upon a large number of introspective reports of actual anger experiences. The causes of anger reported were behavior of others which (1) hindered some course of action on the part of the subject, or (2) lowered his self-feeling. The second cause as well as the first is really a form of thwarting, since it interferes with the habitual attitudes and bearing of self-esteem.

Three types of anger response are distinguished in the material which Richardson collected. The first type (attributive), which comprised 71 per cent of the cases, is distinctly hostile and retaliative either in imagination or in fact. Examples are as follows: visual and motor imagery of maltreating the offender; use of imaginary invective and sarcasm; defaming the offender to a third

[1] Marked introversion of anger and other emotions was indicated in 26 per cent of questionnaire reports collected by the writer from a class of students.

person, either in reality or in imagination; cursing overtly at the 'whole business' (making generalities, rather than the person, the victim of the anger); believing or imagining ill of the offender; imagining an exaltation of self so as to be able to heap retribution or scorn upon the offender; making or enjoying a joke at his expense; and substitution of 'irascible play.' The last named reaction accomplishes in a playful manner the bodily or verbal attack which one would like to make in earnest. Another method is to build up an attitude and a plan for future retribution through which the accumulated grudge may be released.

It will be seen that all of these forms of attributive reaction are introverted except the last three. Irascible play and wit are successful forms of anger response, that is, they effectually remove the hindrance or relieve self-abasement. They are more overt than the other forms. The attitudinal reaction (grudge-building) also may be useful if it takes the form of a drive for competitive achievement. The enemy is to be shown that the one he has affronted is a better man than he. The thwarting agency is thus conquered in a constructive and socially approved fashion. Struggle (with the emotion of anger) may ally itself therefore with the hunger and sex drives as a dynamic factor in learning and progress. The proper control and direction of anger is thus an important pedagogical problem.

The second type of anger response is one of self-control, nonresistance, or deliberate friendliness (contrary reaction). Such habitual inhibition and passivity are often assumed toward intimate associates. There are also attitudes of 'turning the other cheek,' of martyrdom, and of inner superiority to the offender. Such anger is markedly introverted. It was found by Richardson's subjects to be both unpleasant and unsuccessful. It characterizes the ascetic and morbid personality rather than the socially developed one. The contrary reaction is relatively infrequent, occurring in 18 per cent of Richardson's cases.

The third type of response is an attitude of avoidance (indifference reaction). The subject puts the *whole situation* out of mind so as not to be bothered by it. This occurred in but a small per cent of cases, and proved to be an unsuccessful adjustment of the struggle response.

The importance of wit and humor as an outlet for anger is worthy of special comment. By taking an objective view the incongruous elements of the situation are seen, and the pleasurable response akin to that of being tickled is aroused. This response is neurologically antagonistic to the unpleasant visceral core of anger (see Chapter IV). The latter is therefore inhibited from the field and laughter takes its place. At the same time the need of removing the thwarting or humiliating agency is fulfilled; for the joke makes the offender appear at a disadvantage, while the situation as a whole is made to seem trivial. The ability to turn one's anger into a jest goes with the trait of insight (p. 118). It is an invaluable asset in wife or husband, and is sometimes appropriately called 'the saving sense of humor.'

Rationalized Anger. Not infrequently anger is a reaction used to disguise other attitudes. We have already observed how greed, self-display, and the like are kept from recognition by the indignation shown when they are in danger of being detected. This is the principle behind the belligerent intolerance of the crowd (p. 315). Another instance is the attitude of being indignant at some one in the name of society, of civilization, or of humanity. Though sometimes genuine, 'moral indignation' is often a disguise for personal ill-feeling and irritation. 'Outrages' arise from the violation of personal feelings. We frequently hear the rationalization: "It's not so much the thing itself as it is the principle which I object to." Some religious persons derive satisfaction through speaking of their anger as 'righteous indignation.'

Hatred may be 'cultivated' to give support upon other grounds to hostile intentions when the original motive for hostility does not pass the test of social approval. Between the North and South in the conflict over abolition there arose mutual recriminations and charges of immorality of all sorts; the basic hostility, essentially an economic one, was left unstressed. Hating in order to strengthen a cause has been discussed as a part of the behavior in crowds (pp. 315–16).

Aversions are rationalized in the same manner. It is not hard to find socially acceptable motives for disliking people to fortify our socially unacceptable ones. The man whom we have owed money

for a long time we come to dislike, sometimes for no conscious reason at all, and sometimes because of his supposed hard feeling toward us. The motive of hostility which one is unwilling to recognize in himself is attributed to another (projection). Conspicuous hatred of tendencies in others is a decoy by which the individual draws his own attention and that of his associates away from the same elements in his own motivation. Another rationalization is present in estrangement between relatives or friends. When love turns to hate it must have some good reason to justify it beyond personal grievance. All manner of evil is, therefore, credited to the former friend. Accusations are believed which collapse like bubbles when a reconciliation is brought about.

2. Sex Conflict and Adjustments in Family Life

Sex Differences. Attitudes toward Women. Before discussing the conflicts and adjustments of the love drive it will be well to review some differences of personality between the sexes and some of the broader attitudes of one sex toward the other. It is rightly said that women are more personal and emotional in their interests than men. Here in fact lie the only significant psychological differences of sex. These differences are more probably due to early influences and the pressure of a man-made double standard of morals than to innate factors. From the start the girl is denied opportunities for development which are held open to the boy. She is considered a 'tom-boy' if she secures birds' nests, builds boats, plays ball, or studies electricity. Her lot is to be dressed, petted, admonished, and loved by those about her. She must react to people rather than to things. Play with dolls, the traditionally 'correct' pastime for girls, still further emphasizes the personal element. Human feeling rather than natural law becomes her guiding principle of life.

As adolescence approaches jealous parents set up barriers against free expression of the sex interest by building up in the girl a repression based on fear or abhorrence. Sex life is submerged and introverted; and emotionality toward persons who appeal to her is therefore raised to a high intensity. No understanding of her own nature, no true knowledge of the forces about her, is per-

mitted. All problems are solved for her in advance. All her thoughts and actions are controlled by custom, which in this regard is largely the product of male jealousy.

The fruits of inhibition, conflict and over-shielding are seen in the mature woman. Among university students young women, though gifted in literature and allied subjects, are markedly inferior to the men in laboratory sciences. Their world has been one of persons rather than things; and they cannot be made to take a serious interest in the latter. Concepts into which feeling does not enter have little interest for them. Physiologically the heightened emotionality of women is indicated by wider variations in blood pressure under emotional excitement than exist in men (cf. p. 88).[1] In their mature reactions women look for the same personal basis of response as that which existed in their early family life. In college a grade is not so much a measure of attainment as a mark of personal approval or disapproval. A business obligation is generally subordinated to the supremacy of feminine feelings. Numerous snatches of conversations collected by Professor H. T. Moore suggest that whereas men talk most frequently about money, business, and recreations, the dominant topics of female conversation are men, clothes, and decoration. Professors Haggerty and Kempf have found that in the word association test women greatly exceed men both in number of emotional inhibitions and in the substitution of responses which prevent embarrassing betrayal of conflicts. A greater tendency toward giving predicate (introverted) word reactions in such tests is also found among women. (Wells.)[2] The abnormal ranges of these phenomena also are more pronounced among women. Psychoneurotic conditions are more prevalent in the female than in the male sex. All this is the result, not so much of woman's innate tendencies, as of spending her early years in a home and society warped through unrecognized conflicts and sex jealousies. The recent movement of Feminism is a struggle of woman toward freedom, not only political but psychological as well. Such freedom will never be obtained

[1] Marston, W. M., "Sex Characteristics of Systolic Blood Pressure Behavior," *Journal of Experimental Psychology*.

[2] For a description of the word-association technique review pp. 116, 134.

merely by giving her the ballot at the age of twenty-one. There must be deeper insight into the conditions which surround her in childhood and youth, and a revision of the standards for the development of the female personality.

The life of woman in maturity is no less filled with barriers to self-expression than her formative years. Her sex drive, though repressed by masculine regulations, operates none the less powerfully. Through the attachment to husband and children it becomes the central motive of her life. In the home, her prescribed sphere, the only fundamental interests which exist are love interests. Her only efferent modifications of this drive are personal ministration and caressing. The man's field of development is broader. In order to satisfy *his* prepotent needs he learns a vocation and goes out into the world of men and things. The sex drive therefore becomes a basis for progress along many lines; and upon it are based derived drives (cf. p. 65) which come to be followed as ends or interests in themselves. Thus starting from the same prepotent factors, the pathways of man and woman diverge. Man loves ardently but for a short time only, and then is off about other business. In the life of woman love is the perpetual theme.[1] This difference, or rather the failure to adjust to it, is one of the chief causes of unhappiness in married life.

Spurious standards of chivalry have done much to prevent a wholesome attitude toward women. Men are singularly jealous of their fiancées, wives, and daughters. This jealousy arises partly from their own sex tendencies. Sexual activities are in men less habitually restrained than in women either through early training or through social standards. There is often either a frank and promiscuous sexual indulgence or else a craving for such indulgence inhibited only by a conscious struggle. This conflict between socialized and unsocialized drives colors man's feeling toward the woman whom he loves by an attitude of projection. He becomes worried about *her* sexual desire as he is about his own, and scans all of her dealings with other men with a kind of puritanical suspicion. He also fears the trespass of other males, constituted as he is, upon the domain of his desire. Such doubts fill his mind

[1] This fact is beautifully symbolized in Ibsen's drama *Peer Gynt*.

with horror. There is a conflict between his sex drive (toward a certain woman) and his jealous fear. The result is the erection of a barrier about the woman to prevent any possible lapses. He must protect her from all contact with the temptations of the world just as the Turk used to veil the ladies of his harem. For any one to accost her without proper introduction is an insult to her 'honor.' This care for the morals of the fair sex is rationalized by ideal terms such as the 'purity and honor of women,' 'chivalry,' and the 'sanctity of the home.' Gentlemen make it a point of honor not to discuss with other men their conquests with women. The pretense of chivalry is here largely a rationalization for the true motive, namely, that they do not like to think of their intimate sex experiences in connection with other men. Similar motives lie behind the prudish and austere codes for women established by the males of many communities. The presence of the fallen woman is both an insult and a menace to the 'respectability' of our wives and daughters. Strangely enough, women (who are supposed to be purer than men as a sex) show no dread of contamination from such a source.

These conflicts and jealousies, disguised as chivalry and respect for women, instead of ennobling woman, confine her to a narrow sphere of convention and moral bondage. There is continued in her maturity the type of control which robbed her of a wholesome development through childhood.

Adjustments between Husband and Wife. The life of the family centers in the sexual reflexes of husband and wife. This is equivalent to saying that the family is based upon love. On the afferent side the love responses are conditioned and stimulated by every detail of the person and behavior of the loved one; and on the efferent they are developed to include not only the sex act itself but caressing, verbal endearment, and that protection of the home which is conducive to the fullest satisfaction of the love interest. All love between man and woman has its origin in the internal stimulation of sex (cf. pp. 69–70).

The close relation of husband and wife and the restrictions with which marriage is surrounded produce inevitable overt conflicts. There are no born affinities; harmonious adjustments are obtained

only through training in conjugal life. Anger aroused in domestic conflicts must meet with some balance or inhibiting agency if family ties are to remain unbroken. Such an agency nature provides in the antagonism of autonomic reactions explained in Chapter IV. The process is as follows. The unpleasant feeling of anger accompanies the visceral changes evoked by sympathetic impulses. The sex response, on the other hand, pleasant in consummation, is the result of the discharge of sacral impulses. The motor effects of these two classes of impulses are, however, antagonistic to each other. It is physiologically impossible for both to operate at the same time. Hence when sex (or love) activities are in progress, or when desire becomes strong, the emotion of anger is *ipso facto* inhibited. When therefore domestic annoyances bring husband and wife to cross purposes, and catastrophe is threatened, the recurring organic need of one for the other enters to save the day. Sexual enjoyment of course does not abolish all effects of the anger struggle. Traces of annoyance may remain, or perhaps be repressed, which may contribute to the onset of another quarrel. But love is here an opportunist diplomat who prevents the tensions of anger from reaching the breaking point. Given an attitude of affection, the differences can then be gradually brought to a peaceful and satisfactory adjustment.

In marriages where love flourishes both persons avoid serious quarrels which would threaten a severance of affection for a day or even for an hour. Sharp words are quickly atoned for, lest a suggestion of estrangement arise. "It is all over between us" is a moment of the profoundest tragedy. Each dreads the emptiness of a situation in which the hundreds of attitudes and habits organized about the sexual relation with a specific person will be forever thwarted. Rather than incur such a calamity some married persons put up with grave lapses in the conduct of their mates.[1]

Causes of Marital Disharmony. If the sex drive is the force holding partners in marriage together, it follows that any agency which impedes its normal function tends to destroy family life.

[1] Children have the same feeling of being utterly lost when their parents punish them by pretending that they do not care for them any longer.

There is no marriage in the true sense without normal satisfaction of sexual needs. Miss Colcord found that sex difficulties were the most frequent sources of home-breaking and desertion. A variety of causes contribute to the failure of the sex impulse in married life. A neurotic personality in husband or wife is a conspicuous factor. The establishing of unfortunate attitudes toward sex in childhood and youth is generally the history of these cases. Fear, shame, and inseparable fixation of love impulses upon the parents are some of the forces which have been pitted against the normal and mature release of the sexual response. Apathy or aversion in marriage is the result. The false religious teaching that desires of the flesh are evil has been responsible in some cases for the introversion of the sex drive. An allied source of repugnance in women is the crudeness with which sexual love-making is carried on by males who ignore the woman's need of a gentler preparatory wooing.

In homes where sex adjustment is inadequate to meet biological needs secondary love interests are likely to be substituted. Energy is given to religious or philanthropic work, to altruistic propaganda, to gardening, or to pets. If children are present, there is lavished upon them most of the caressing that would be given to the married partner were there no inhibitions in that direction. These love objects, instead of the spouse, become conditioners of tonicity in the internal organs of sex (sexual desire). Such balancing factors, as they are called by Dr. Wells, are, however, an imperfect substitute; for they stimulate (by conditioning), but cannot satisfy, the love desire. At best they do the service of occupying the attention and reducing the painful consciousness of conflict in the sexual sphere proper. While they may occasionally lead to constructive and altruistic endeavor, they are generally to be considered as symptoms of marital maladjustment.

There are other causes beside the sex conflict for domestic unhappiness. Unwise methods of control may be employed by one or both partners. The spoiled child who by screaming or sulking controls her parents grows into the headstrong and petulant woman. Austere domination in the husband may be due to a similar trait of personality. Or again, the man who feels himself insignificant in the presence of his fellow men may compensate by

becoming an iron-handed autocrat in his own home. A frequent source of friction is the continual demand made by wives for gentle affection and sympathy, responses in which most husbands are sadly deficient.

Sagacious women still obtain their ends through controlling their husbands by the age-old appeal to sex desire. It is done in a disguised fashion by saying "if you love me," "if you are a man," "if you have the courage," and similar phrases. These appeals are effective because they express her opinion of *him*, and are therefore instrumental in the sex relation between them. According to Dr. G. S. Hall it is the function of woman, by coyness and reserve in giving love-rewards, to spur her mate to the highest achievement of which he is capable.

Appeals of this sort failing, tears and even hysterical attacks, half feigned, half real, are sometimes employed for accomplishing woman's purpose. Through the dwarfing influences under which she was reared the eternal feminine again shows itself as the eternal child. Infantile habits are reawakened (regression) when more rational and 'grown-up' methods fail. The spirit of resignation and of martyrdom are persistences of the infantile pouting habit. In a proud and sensitive husband these attitudes arouse quick resentment, for they imply both unfairness on his part and dissatisfaction of the wife with her marriage to him. Few reactions are as dangerous as this to the stability and happiness of wedded life.

Women of neurotic constitution, when under too great a burden of repression, fear, or domination by the husband, develop abnormal symptoms as a method of escape. Physical fatigue, distaste for home-work, fear of having children, sexual aversion, and inability to transfer love from the parents to the husband are frequent conditions. The defense reactions shown include tendency to be ill without cause other than 'nervousness,' placing household responsibilities upon others, desire for medical treatment, sanitarium rest-cures, or operations, and development of symptoms (real or imagined) which prevent sex relations with the husband.[1]

[1] Local draft boards during the war were besieged by neurotic women who pleaded with the officials to draft their husbands for military service.

These symptoms are not a sign of deception or malingering in a wife, but the reaction of an unconscious mental disease in protest to her environment. The cure for such conditions lies in helping the patient to gain a complete understanding of herself. Occasionally these symptoms are a revolt against marital conditions which would be genuinely intolerable even for persons of stable constitution. Separation from the husband and establishing life upon a new basis is here the correct and only solution. Neurotic tendencies in the *husband* take the form of physical depletion, desire to be petted, bullying, studied cruelty or neglect, humiliation of the wife, 'touchiness' and moodiness, unreasonable jealousy, and tendency to blame the wife for his own shortcomings.

Chronic jealousy is a grave indication of sexual maladjustment between husband and wife. The origin of one type of sex jealousy has already been described. Another form results from an attitude of inferiority combined with fear. Periods occur in the lives of women, such as pregnancy and the crisis of middle life, in which they are harassed by the thought of losing their physical attractiveness. They worry, therefore, lest their husbands cease to care for them and transfer their affections elsewhere. In such a state a woman is on the alert and develops a 'perceptual set' to detect the first symptom of infidelity. Some cause, whether real or fancied, is soon discovered, and open jealousy and accusation follow. In psychopathic conditions there occur delusions of infidelity on the part of the spouse. Inferiority jealousy is by no means limited to women. Men who lose their wealth, or become ill, crippled, or otherwise unattractive, are likely to show the same reaction. The effect upon the marital union is unfavorable. Such jealousy not only arouses resentment in the mate, but brings into a conspicuous light the defect from which it arises, thereby enhancing the estrangement.

The resort to tears, reproaches, jealousies, and similar controls have a further effect upon the partner in wedlock. It causes him or her to repress all resentment and discontent, and even to conceal thoughts and actions, for the sake of preserving peace. Domestic scenes are avoided in this way, but at the expense of conflict within the individual. Hostile attitudes are secretly built up, attitudes

which, though barred from expression, widen the breach between husband and wife. The woman has many feelings whose overt signs must be inhibited. She must repress criticism and remonstrance which she believes are just. Often she must face the complete failure of her ideals for home and family life, and must reconstruct her plans without a word of complaint. Against the alienating effect of these conflicts only the most perfect co-adjustment in the sexual life can be a sufficient safeguard.

There is a romance about courtship which disappears in married existence. The sex drive of the wooer is not yet released; every detail about the beloved from head to toe is, therefore, a stimulus which helps to augment the tonus already present in the pelvic viscera (see p. 70). This is the condition of being blindly in love. For the married one the mate loses this halo of perfection. The sex drive is more readily and frankly released; hence other considerations than those of love determine the perspective in which the spouse is perceived. A month's absence restores the unsatisfied longing and with it a great deal of the romance. Marital vacations, and the exercise of restraint while living together, thus give to wedded life the happiness of a prolonged honeymoon. To love ardently and well, to achieve insight into the cause of domestic troubles rather than to blame the other for them, and to see the humor of things — these are the best solutions of the problems of adjustment between husband and wife.

Adjustments between Parents and Children. Introductory Statement. Family life fulfills a double function. It is one of the greatest sources of individual happiness; and at the same time it transmits the lore and customs of the group and equips the individual for his life as a member of society. It is a face-to-face group, bound by the strongest of ties, and productive of ineradicable traits of character in its members. Leaving the broader aspects of the family to the sociologist, our present discussion will be confined to the problems of conflict and adjustment peculiar to familial relationships. In spite of the inestimable value of the family as a socializing agency, its peculiar organization sometimes fosters serious covert conflicts in the individual members. The chief tie which binds parents and children together is love. It is,

however, a love of an incomplete or restricted kind. And this love struggling against the mature sex drive for the control of the final common path produces the central conflict of family life. The whole subject can best be understood through a review of the contributions of Freud and the psychoanalytic movement. It will be necessary, however, to distinguish carefully between fact and theory.

The Freudian Conception. *Freudian Fact:* In working with adult psychoneurotic patients Freud found that there was prevalent a conflict in which the normal sexual tendencies were repressed (blocked by some antagonistic reaction). Indications of this repression were seen in dreams and hysterical symptoms. Closer analysis usually revealed a strong but concealed attachment for a parent, generally the parent of the opposite sex from the patient. The inference follows that this attachment is of a sexual character, and that the horror of incest causes not only the repression of the fondness for the parent but the blocking of the entire sexual impulse with which it is connected. This inference is justified by the fact that giving the subject insight into the facts just stated (psychoanalysis) releases the sex drive in a normal direction and cures the psychoneurosis. The type of conflict described probably occurs *in milder form* in a large number of families, and leaves recognizable traces upon the personalities of those affected.

These are the facts. They are denied by many persons upon first hearing them, and accepted upon later reflection by most of those who deny. The original denial is due to the conventional attitude that such things are too revolting to be considered possible. Unbiased observation shows that they are neither revolting nor impossible, but natural and likely. Any objectively minded investigator can verify these facts if he will take the trouble.[1]

Freudian Theory: Of psychoanalytic theory we cannot speak with the same confidence. The Freudians assert that sexuality extends back into earliest infancy; and the boy, by some instinctive predilection for a person of the other sex, almost as soon as born fixates his desire upon his mother. The girl in similar fashion

[1] The writer's conviction of their truth is based upon personal work with mental conflicts in college students.

selects her father for a lover. Before many years, however, the child learns that such love attachments are not tolerated by society, and that both his youth and the other parent stand in the way of their full realization. Thus we have in early childhood not only the root of sex conflict, but the conflict itself. As the child matures the horror of the suggestion of incest causes the sex desire for the parent to be inhibited (repressed). It becomes unconscious and is forgotten. The love however is not destroyed; it is merely dissociated from the individual's daily thought and action. In Freudian terms it goes on 'below the level of consciousness,' and prevents the normal release of the sex drive with which it is inseparably associated. In the language of psychoanalysis the 'libido' remains fixated at an earlier childhood level.

Psychoanalysis effects a cure by bringing back the parent-complex to consciousness and allowing the more rational attitudes of the adult to play upon it and show the patient its absurdity (assimilation, *abreaction*). The sex drive, hitherto fixated upon the parent, is thus liberated and allowed to follow a normal course.

The theory as stated above needs some revision from the viewpoint of scientific psychology. In the following attempt at restatement it should be remembered that there are points still requiring proof. The wise reader will regard it merely as a basis for further study into the problems of adjustment between parent and child.

Restatement of the Freudian Theory. 1. The Love of the Child for the Parent. The traditional view of filial love, namely, that it is an instinct and is what every parent has a right to expect of a child, is seriously in error. Some children do not love their parents at all; others love them far too much. In either case the parent is responsible. The child's affections must be *won* by the parent. They are not acquired as a natural right.

In an earlier chapter it was pointed out that the stimulation of the child's sensitive zones (mouth, neck, breast, etc.) gives a pleasure similar to the lust pleasure of the adult, and produces responses for the continuation of the pleasurable contact.[1] In the

[1] It is suggested that the student review the portions of Chapter III dealing with the sex and sensitive zone reflexes before proceeding with the following discussion.

childhood form the enjoyable sensations are somewhat diffuse; in full sexual love the pleasure is diffuse but strongly emphasized in the genital regions.

The psychoanalysts ignore the distinction between these two forms, and pronounce the childhood love sexual in character, calling the sensitive zones 'erogenous zones.' This interpretation is scarcely justified. In the sensitive zone reactions exteroceptive stimulation upon the skin, for example, tickling, brings forth the characteristic response. In sex reactions the chief stimulation is *internal*, arising probably from tonic changes in the pelvic viscera, external contact from sensitive zones serving merely as an allied stimulus. Sensitive zone responses therefore are *allied* to the sex drive, but appear genetically *before* the latter. The end result of the child's impulse is more abridged than that of the adult. The stimulation of sensitive zones evokes movements aimed merely at securing further stimulation. Contact in sex excitement also yields the response of enhancing itself; but this response is only a means of reaching a climax resulting in the release of the pelvic tensions. Hence, all things considered, it is better to maintain a physiological distinction between childhood and mature love.

From the social point of view there is an important reason for preserving this distinction. Society approves and encourages the love between parent and child based upon sensitive zone responses; but it as strongly *forbids* love based upon the sex response. In their continuity of development through puberty these two forms provide the root of covert conflict within the family.

It is necessary now to retrace our steps and show the manner in which the young child's love develops from the sensitive zone reactions. This process, which is essentially one of conditioning, has been touched upon in preceding chapters (pp. 68, 71). In Freudian terminology the phenomenon is known as 'fixation.' Fixation is merely a technical word for falling in love. The immediate and precipitating cause of falling in love is physical contact. Prior to this there may have been admiration and friendship, but not until the actual caress or embrace are the deeper and more compelling feelings aroused. Now the merest touch or glance serves to evoke the love emotion in its full strength. This illus-

trates clearly the conditioning of the sexual response. Given the hypertonic vesicular pressure, caressing contact with the beloved becomes an *allied stimulus* for increasing this pressure, that is, for raising the desire to a higher pitch. At the same time other stimuli present (for example, sight or voice of the loved person) acquire through conditioning the power of increasing the visceral tension independently of the tactual stimulus. The mere sight therefore (or even recall) of that person comes to evoke desire.[1]

There is no reason to doubt that the sensitive zone responses can be conditioned in a similar manner. If this is true, the love of the child may be said to be 'fixated' upon the parent who fondles and caresses it in the same manner that the youth falls in love with the maiden, but with the difference that the child's response lacks the specifically sexual element. By conditioning the sensitive zone reactions the parent becomes the object of the child's love — love, that is, of the sort of which the child is capable.

So far there is no occasion for social disapproval. This love fixation of the young child is regarded as natural and right. And unless it is too strong or the child unusually susceptible there is no immediate likelihood of serious conflict. Let us suppose, however, that a highly nervous girl, over-petted by her father, approaches pubescence. There begin to develop the internal functions which give rise to sexual desire. At the same time the sensitive zone mechanisms become bound up as allied stimuli with the sex functions themselves. This point is exceedingly important. The child's kiss, which heretofore yielded only a simple sensitive zone pleasure, now stirs deeper feelings recognized as impossible of indulgence within the sphere of the family. Sensitive zone and sexual systems of response are welded into one. The adolescent struggles in vain to keep her love sexless when sex is becoming the great driving force in her life.

The needed solution is obvious. The youth must give up the

[1] It must be remembered, of course, that the sexual basis for this experience is seldom clearly present in the consciousness of the participants. The conscious state is richer than the physiological elements just described, and contains much romantic imagery of ideal qualities, future happiness, devotion to the beloved, and the general exaltation characteristic of lovers. The present account is concerned merely with the physiological, or causal, basis of the experience.

childish (sensitive zone) love fixation upon the parent. But this, in the case we have assumed, is too strong to be lightly broken. The shame and fear, therefore, that the love for the father is becoming the love of a grown woman cause this fixation, and often the entire sexual drive, to be repressed from consciousness. (In neurological terms this amounts to inhibition and dissociation.) Puberty, therefore, brings on a crisis, an introverting of the love drive, and the beginning of a serious conflict. The boy's love for his mother follows a similar course.[1]

An occasional defense made by children and adolescents against the formation of too intense a parent-fixation is the development of an opposite type of response (ambivalence). To outward appearances the child becomes estranged from parental influences, and in some cases expresses hatred for the parent. This aversion may be quite unaccountable to the child himself; and it is of course painful to the parent. The youth feels self-reproach for the restraint and coldness which he seems compelled to manifest toward those whom he ought to love. The wild, asocial period which occurs between ten and twelve probably marks the beginnings of the parent-fixation conflict. Boys at this age cannot endure petting or caressing by grown women. They have reached an age when physical demonstrations of mother love can no longer be permitted. At this period parents are said to lose their children for a time. After the pubertal crisis is over and the childhood fixation broken, the parent gets his child back again. A mature friendship is now established; the sexual drive is no longer conditioned by the person of the parent.

An important problem still remains to be solved. If there is no early instinctive love which recognizes the opposite sex as its object, why is it that the fixation of the girl is generally upon the father, and that of the boy upon the mother? This question will be discussed in the following section.

2. The Love of the Parent for the Child. There is another side to the formation of the bond between parents and their offspring.

[1] Instead of agreeing with Freud that the love of the child is originally and instinctively sexual, our theory holds that it is based upon sensitive zone stimulation (by conditioning), and does not become sexualized until puberty.

The chief cause of the child's love fixation is the love *manifested by the parent* toward the child. To find a child who has never received petting or caressing from a parent is indeed a rare phenomenon.[1] We have now to consider more fully the nature of this parental fondness.

The clue to the interpretation of adult love we have already given in the statement that the sensitive zone responses no longer function independently in maturity, but are fused with the complete sexual love reactions. *On the afferent side* we may say therefore that adult love responses are *always predominantly sexual;* the major drive for the caressing of children as well as of the mate originates in the visceral stimulations of the sex organs. This fact is so seldom recognized, and so 'unconventional,' that a few observations may well be given in its support. First, bodily contact and kissing assume a different and fuller significance among adults than among children. They become tokens of sexual attachment if pleasurably indulged. Hence the kiss between father and grown daughter is perfunctory and brief, a ceremony of affection carried over from childhood. Barring unrecognized love fixations, there is a similar restraint in the caresses between mother and grown son.[2] Society overlooks the sexual import of the adult kiss and embrace when bestowed upon a child; because, although in so far as they go these acts are a part of the full sexual embrace, it is fairly certain that they will not be carried further. An additional reason for this toleration is that, since the child is immature, his own sexual desire will not be aroused. Although the efferent expression of the love is thus restricted, there can be little doubt that its afferent origin is supported by sexual (visceral) stimulation.

A second indication appears in the fact that children serve as a balancing factor for a blocked sexual outlet in the parent. Widows and divorced or neurotic women often love their sons with a fondness which suggests that the latter are taking the place of a husband. The behavior lies, of course, within conventional limits, and the sexual nature of the love is unconscious; but the rôle of the

[1] The importance of the parent in the production of conflict has been somewhat neglected by the Freudian school.

[2] Our aversion to the sight of two grown men kissing is to be ascribed to the suggestion of its sexual significance, and therefore of homosexuality.

sex drive as the basis of the attachment is not to be doubted. In the same way, in periods of necessary sexual abstinence, the father is likely to feel a greater desire to caress his children than at other times. We are justified in concluding that there are not two separate love instincts, one for the spouse and the other for the offspring; but that adult love is all of one kind and springs from the internal pressure of sexual desire. Only through social taboo and repression has the human race been kept from recognizing the sexual origin of its consanguineal love.

These considerations enable us to answer the question raised at the end of the last section, namely, why it is that the child's love tends to be fixated upon the parent *of the opposite sex.* Since there is a strong but unrecognized sexual component in all adult love, it is wholly natural that the father should lavish more affection upon the daughter, and that the mother should be more strongly attracted toward the son. The father has usually a different, a more tender feeling toward the daughter. He sees in her resemblances to her mother, which as partial conditioning stimuli tend unconsciously to evoke the love responses which have been habitual toward the latter. The same accentuation of feeling occurs between mother and son. Mature sexual love dictates, albeit unconsciously, the preference for the child of the opposite sex. Hence the 'choice' of the opposite-sexed parent by the child really represents the parent's choice, and results from the more intense love-making which that parent bestows upon the child.

At the approach of puberty the child not only feels his filial love to be assuming a sexual character, but recognizes the unconscious basis of this same love in the parent. The full understanding of the rôle of male and female, and its exemplification between the child's own father and mother, add to the force of this awakening, and render it more critical for the neuropathic individual.[1]

[1] Love fixations between parent and maturing child are guarded against by customs whose significance is usually unrecognized. Among certain primitive tribes a girl must carefully avoid all association with her father between her puberty and the time of her marriage. The mother-in-law tabu, almost universal among primitive peoples, seems to be based upon a sex conflict. The mother-in-law is related to the son-in-law's wife, hence she is associated with his feeling of sex desire; on the other hand, being his wife's mother, she assumes toward him a rôle similar to that of his own mother. This attitude and the former are incompatible; hence the conflict and avoidance. This interpretation differs somewhat from that given by Freud.

To summarize: The love of the pre-adolescent child for the parent results from a conditioning of sensitive zone reactions (fixation). This conditioning is established usually for the parent of the opposite sex. The reason for this is that the parent's love, being unconsciously sexual in origin, is greater for the opposite-sexed child, and that child therefore is given greater physical affection than the child of the same sex. At puberty the sensitive zone reactions become consolidated into the system of mature sexual responses. There is required therefore a detachment of the whole group of love reactions from the parent-stimulus, and a re-conditioning of them eventually by a person of opposite sex outside the family (transference). Children who have been petted to an unusual degree find it difficult to make this transfer complete, and show traces of the parent fixation in their later social and marital adjustments. Adolescents who have suffered in addition from an unstable heredity fail altogether in re-conditioning their love impulses outside the family. They keep the parent fixation, but repress it from consciousness, and with it the entire sex life. Conflict results.

This account differs from the Freudian theory in the following points. (1) The love of the child for the parent is not regarded as sexual originally, but becomes such at puberty. (2) The critical period of conflict is thus later childhood or adolescence. (3) The fixation upon the parent of the opposite sex is due rather to the behavior of that parent toward the child than to any instinctive sex preference upon the part of the latter. (4) The figurative methods of explanation employed by psychoanalysis have been replaced by concepts of physiology and behavior psychology.

Personal and Social Significance of the Child-Parent Fixation. The value of the facts and hypotheses we have discussed depends upon the universality with which they are applicable to family life. Psychoanalysts maintain that these phenomena arise from the normal sexuality of every infant, and are therefore universal. Traces of the Edipus and Electra complexes [1] are found by them at the root of religion, art, folk-lore, and custom. Others limit the occurrence of parent fixations to strictly pathological cases. Some

[1] Names given to the parent fixations of boys and girls, respectively.

degree of the phenomenon is no doubt natural in every home where the children are well loved. On the other hand the repression of the later sexualized form of the fixation, with resulting conflict, is much more rare. A middle ground between the two extreme views therefore seems desirable.

The prevalence of the effects of parent fixation may be summarized tentatively under three heads. First there is the pathological group, the borderline of insanity, including hysteria, psychasthenia, perversions and psychoses, diseases which may be traced to conflicts arising from this source. These form a relatively small but unfortunate group. Isolated and milder symptoms such as moodiness, excessive day-dreaming, distractibility, high emotionality, and lack of energy, occur among a larger number who would not be diagnosed as having a definite mental disease. Retardation of personality development (a kind of infantilism) is a frequent condition.

The second class exhibiting effects of parent fixation are those normal individuals who maintain a tender, sympathetic, and somewhat idealistic attitude toward life. In such persons conflict and inhibition of the sex drive at puberty, while not strong enough to be pathogenic, was nevertheless present. This repression led to a life of fantasy and imaginal adjustment much of whose inner richness was retained in the adult. There is preserved also the tendency to shun the stern realities of life and to substitute an ideal realm of fancy. This class has given rise to poets and dreamers, to philosophers, mystics, and religious zealots. In science such individuals prefer the vitalistic or purposive attitude to the mechanistic. They are, in short, the 'tender-minded' class described by William James. The writer is inclined to believe that this group coincides fairly well with the introverted type of personality discussed in Chapter V. Parent fixation would thus constitute the leading cause of introversion, a trait which characterizes about one third of the individuals tested by the writer. Further investigation, however, is necessary in order to confirm this view.

Instead of a general introverting of the life adjustment, close attachment to the parent more frequently leads to the acquisition of specific attitudes, traits, and interests from intimate contact

with the beloved parent. Love of the father or mother renders the child peculiarly suggestible toward word and deed coming from that source (cf. p. 236). *Rapport* of this sort explains the tremendous influence of early home life upon the permanent character of the individual. This is the third and widest sphere of influence of the fixation we are discussing. It is well-nigh universal.

Parental love affects various children differently within the same family. Some children, for example, appear to be similar in nervous constitution to the parent upon whom the love fixation is strongest. Where one parent is neurotic one or more of the children of the opposite sex may resemble that parent markedly in temperament and outlook upon life, as well as in morphological and physiological characteristics. This is probably due both to inheritance of nervous and emotional instability and to the superstructure of habits and traits acquired from association with the beloved parent. Much more of the resemblance between child and parent is due to acquisition than is popularly supposed. Given on the one hand an hereditary susceptibility, and on the other a parent who loves the spouse too little and the child too much, and an abnormal fixation of the child's love is an almost certain result.

The first child and the last in the sequence of children are likely to be the most strongly affected. The eldest, being the first, and for a while the only child, receives the full effect of the parent's inhibited love impulses. The youngest feels submission and inferiority through having so many stronger than he about him. He requires the greatest protection and shielding, and in consequence carries through life the consciousness of being the 'baby' of the family. The last child is also the last resort of the love of the neurotic parent; hence the tendency to keep him from growing up. The children in the middle of the family sequence are more likely to escape notice and to be allowed to develop according to their own bent. Indeed, they sometimes suffer from the opposite evil, neglect. They lack the society and interest of the parent which are so valuable in character building. Their existence is colorless and mediocre.

The harmful effects of exaggerated parent fixation can be avoided by watchful care. Excessive day and night dreaming,

reclusiveness, craving to be petted, jealousy, stubbornness, lack of teachableness, emotionality, and nervousness are some of the indications. Knowledge regarding covert conflicts may enable one intelligently to guide the child through the crises of pubescence and the adolescent years to follow. Above all the parent must achieve insight into his own repressions, and must establish a satisfactory sexual adjustment with the married partner. These are the only true safeguards of the mental health of the child.

Further Problems in the Parent-Child Relation. The Evil of Neglect. Although stress is placed upon the evil of excess of family love, the opposite danger, its defect, must not be overlooked. The child requires the company of the parent in order to develop the maturer sympathies and the broader outlook needed at the approach of manhood or womanhood. Narrow and aggressive selfishness results from the lack of social education within the family. Individuals who have grown up destitute of parental love show a poverty of sympathy, of susceptibility to social influences, of understanding of humanity, and of general fineness of feeling. Like garden weeds their personalities are devoid of cultivation. The neglected child often develops compensatory fancies, imaginary playmates, and other imaginal means of satisfying its desire for love and friendship. One of the commonest of these is the 'foster-child' fantasy. This is the notion that one's parents are not one's *real* parents. In questioning 904 high-school seniors and college freshmen Professor Conklin found that 28 per cent of them recalled having had some form of this fantasy.[1] A few of them remembered believing it to be a fact until dispelled by adequate proof. In the case of half of those who had the fantasy its duration was over a year. The origin of the foster-child idea is frequently a wish of the child for parents who are greater, richer, and more loving than his own. A typical theory evolved by the child is that he is a foundling, and that his real parents are persons of great renown. In this way a compensatory explanation is achieved for his present obscurity, neglect, or mistreatment.

The fact that most of these fantasies occur (according to Conk-

[1] The present writer found 24 per cent who recalled it among a group composed of the upper college grades.

lin) between the ages of eight and twelve suggests a two-fold interpretation of their significance. In the first place the child is old enough to realize that his early belief in the greatness and omniscience of his parents was largely an illusion; hence an imaginal reconstruction of his parentage is needed. Secondly, this is the period of general estrangement from parents owing to the maturing of the sexual component of filial love and the necessity for inhibition of the infantile love fixation.

Brothers and Sisters, and Other Adjustments of Consanguinity. The childhood relations between brothers and sisters leave a permanent influence upon many personalities. The ascendance of the elder and submission of the younger children are persisting traits. Sometimes compensations, in kind or in substituted fields of endeavor, are developed by the younger and weaker child. Inferiority trends and resentment of domination also endure throughout life. Jealousy because of the greater parental love for a brother or sister is retained in adult attitudes. It may determine lifelong habits, interests, social traits, and even choice of vocation. An only child is likely to be spoiled by over-fixation upon its parents. Childhood love attachments sometimes occur between brother and sister owing to the resemblance of each to the more beloved parent of the other.

The presence of parents and parents-in-law in the homes of grown children, and the relations between grandparents and the succeeding generations offer problems of practical interest. Space does not permit a discussion of these adjustments. We may merely remark that, as in all human relationships, conflict, overt or covert, usually plays a part.

The Selection of Friends and Associates. Though somewhat outside the sphere of family adjustments, the choice of friends presents similar problems and may be discussed in the present connection. Personal attractiveness is very subtle. It depends to a large degree upon physical or sex attraction. Other things being equal, qualities which make one pleasing to look at or to caress render their possessor popular to many and loved by not a few. The clasp of the hand in friendship, or the friendly embrace, has probably a mild stimulus of visceral and sexual origin. It is this

internal drive which makes such contacts pleasurable. The fact that the friendly contact is with a person of the same sex is of course no evidence against this physically pleasurable basis.

The statements just made are not without empirical support. In a statistical rating study Professor Perrin found a high degree of association between affectionate disposition and physical attractiveness on the one hand and liking for the possessors of these traits on the other. Physical appeal was recognized as sex appeal by a number of the subjects.[1] An affectionate disposition was found to be a specially important basis for the liking of young women by young men. Neatness and general care of the body, also conducive to pleasurable contact, were likewise significant. Other factors emphasized as bases of liking were individuality and sincerity (as shown toward the person judging), and pleasing expressive behavior. Persons are well liked whose personalities afford many points of contact for stimulus and response with their fellows. Social participation and 'reaction-getting' have been previously stressed as drives within primary sociability groups (p. 287).

The love impulse in friendship frequently has a specific basis. Resemblance to a former friend or lover, to a child or a deceased relative may lead to a powerful (and to the individual often inexplicable) transference to the new acquaintance.[2] One occasionally sees a face upon the street which arouses in one a strange and irresistible feeling of attraction. Approaching attitudes are thus set up which sometimes lead to the warmest friendships.

Personality traits not directly related to love are also important in the selection and adjustment of friends. There is the drive for social participation, a trait which renders friend-making a daily occupation. Insight into self, combined with humor, is also vital for friendship (pp. 118, 344). Introverted persons who lack insight are likely to have few friends; but those whom they have are intensely loved. Bitter jealousy toward rivals in such friendships is indicative of their origin in unconscious love fixations.

Professor Perrin found that intellectual and ethical traits were

[1] Certain subjects also did not recognize it as sexual in character.

[2] 'Transference' is of course a figurative term. The real mechanism involved is the evoking of the old love habits by the recurrence of certain conditioning elements present in both the old and the new situations.

not so significant in selecting friends as affection and social responsiveness. The ascendant individual usually makes the most satisfactory adjustment with the submissive type. In most close friendships the ascendant-submissive relation becomes quickly established. Expansive persons make friends more readily than reclusive ones. High self-evaluation, if it is not obvious conceit, is no bar to friendship. For pleasurable companionship in work motility traits are very significant. Dr. M. J. Ream found that among a group of salesmen the more 'rapid fire' (hyperkinetic) type liked best to work with associates who also were quick in their reactions. The slower workers were not so decided in their preferences. In face-to-face behavior, such as conversation, the rapid individual feels unpleasantly retarded by having a slow, deliberate interlocutor.

Extreme opposites of type are often seen in the closest friendships. This seems explicable by the fact that one person finds relief from the monotony of his own attitudes in those of his friend. In some cases the foibles or vices of a friend afford an indirect release for tendencies repressed in an individual. Men of the highest attainments and position sometimes find pleasure in the most derelict companions. The friendship between Prince Hal and Falstaff, in *King Henry the Fourth*, is a famous example. There is a similar attraction toward those who are above us in social position, in wealth, or in attainments which we emulate. We derive a kind of vicarious satisfaction through contemplating their success. This process, which has been termed *identification*, has important social applications.[1]

[1] An example of identification is seen in the popularity and predominance of photoplays whose scenes are laid amid the luxury of wealth and society life. The humble 'movie-goer' exalts himself through imaginary identification with these grand personages! Another interesting instance is given by Willey and Herskovits, who ascribe the unwillingness of the servant class to organize into a union to their pleasurable identification of themselves with their masters or mistresses. The possibility of such identification would be abolished by setting up any sort of group distinction between themselves and their employers. ("Servitude and Progress," *Journal of Social Forces*, 1923, I, 228–34.)

Psychoanalysis employs this concept to describe the striving of the boy to be like (substitute himself for) his father, so as to claim full possession of his mother's affection. The daughter likewise identifies herself with the mother. Identification is common in the hero-worship of adolescents. To these we may add the many instances (pointed out by psychoanalysts) of fairy stories, myths, and novels in

3. Inferiority Conflict: Adjustments of Personality Traits

The Nature of Inferiority Conflict. Attitudes of inferiority are the source of considerable social maladjustment. Defect in some sphere of personality leaves the individual two alternatives. He may admit his limitation and try to compensate for it, directly or vicariously, by increased effort. Or he may refuse to acknowledge the defect, and struggle against every indication of it by defense reactions and flights from reality. In the second case a conflict arises between the habitual attitude of self-esteem and the acceptance of facts derogatory to the self. Since the evidence of one's inferiority always comes from without (failure to compete with others, unpopularity, etc.), one way of resolving the conflict is to deny or rationalize these environmental indications, thus allowing the self attitudes to go on unhampered by troublesome facts. It is therefore the environment which is considered at fault, and the individual is excused or justified. The reproach which he really should give himself he identifies with the attitude of society toward him, and rationalizes it as injustice. The conflict is projected upon society.[1] It is obvious that dispositions of this sort may lead to serious social conflict.

Neural conflicts of this type differ from the conflicts of struggle and sex in the following way. In struggle and sex the individual avoids an overt struggle with others by developing an internal struggle: the social conflict is made an individual one. In inferior-

which heroes or heroines suffering from cruelty or obscurity are finally raised to eminence through being favored by wealthy patrons or by gods or fairies, or by having the secret of their noble lineage suddenly revealed. The story of Cinderella is a classic example. Such stories, reminding us of the foster-child fantasy, derive their popularity through the compensatory pleasure of identification of self (in both child and adult) with these romantic characters. (Cf. Green, G. H.: *Psychanalysis in the Class Room*, chs. 3, 10.) The same motive appears in mythology in the ascription to the gods of all the qualities, powers, and fortunes longed for by mortals. The Olympian deities were both omnipotent and eternally blissful.

[1] This form of projection differs from the 'social projection' described in earlier chapters by the fact that the 'projected' material is one of the factors in an unconscious conflict. Another name given to this sort of reaction in psychoanalysis is 'extraversion' (of the libido). It is not to be confused with 'extroversion' in the sense used in this book. We have already studied projection in repressed hostility (pp. 316, 344).

ity the subject incites an overt struggle as a means of defense against recognizing a struggle within himself: the individual's conflict is made a social one.

Types of Inferiority Conflict. Although inferiority conflict can be recognized in almost every field in which the individual can be evaluated, there are three forms especially important from a social standpoint. These are conflicts due to: (1) inferiority in the intellectual sphere, rationalized by academic pretense and opinions; (2) inferiority in the economic and social spheres, rationalized by political and social radicalism; and (3) inferiority in the moral sphere, 'over-corrected' by intolerant reformism.

a. The Intellectual Sphere. It is natural that human beings should be sensitive about defect in a capacity so fundamental as intelligence. In all the writer's experience with students' excuses for their failures he has only once heard the frank acknowledgment, "I guess I'm too thick." Teachers are familiar with a class of students who, though tireless and enthusiastic workers, have insufficient ability to cope with the work which they are pursuing. Yet they persist, repeating courses in which they have failed, and attempting examinations for higher degrees for which they can never be fitted. Such behavior is an unsuccessful attempt to compensate for an innate lack. Instead of applying their efforts to a field in which success is possible, these persons keep on with the 'higher studies,' vainly trying to prove themselves of college capacity and so still the troublesome doubt as to their intellectual equipment.

Overt conflicts often arise when the inevitable failure comes. In some cases the instructor is blamed for unfairness. He is even accused of not crediting the student with much intelligence (projection), and of judging his work upon the basis of such a prejudice. Others rationalize their failure in various ways. An ex-pugilist, who had been illiterate at the age of twenty-seven, achieved an education by hard effort so as to win the favor of a girl he wished to marry, and finally came to an Eastern university to work for a graduate degree in psychology. He heralded his coming by newspaper publicity. But his compensatory drive had carried him too far; he was unable to master the graduate studies. Instead of

admitting this fact, he developed neurotic symptoms, went on a spree, got arrested, and later appeared before his instructors with the tale that his wife and child had renounced him and that he was unable to keep his mind on his books. He soon had a recurrence of an old lung affection and had to leave school and return to his home in a Western State. He now becomes an ardent advocate of the Western climate as an antidote for the 'unwholesome Eastern atmosphere.' Again his drive for publicity brought him into print, but this time as the head of a new sanitarium to be located in the salubrious climate of his home town!

Hostile and envious attitudes are displayed by persons with inferiority conflicts toward those of superior intelligence. The well-known caricature of the professor, while not altogether without justification, seems to be enjoyed with surprising relish by less cultivated individuals. In local politics there is a prejudice against any professor who tries to run for office. Rather than elect such 'theorists' and 'high-brows' a person of the most meager capacity is usually chosen.[1] The development of mental tests brought a storm of criticism against drawing conclusions from such devices. In some cases at least the critics had either stood low in the tests or had been unwilling to try them. But even in academic and professional circles compensations for inferiority are not uncommon. There is the pedant who never uses a short word when a longer one can be found. There is the dignitarian forever on the alert lest some one slight his professional standing.

It should be noted parenthetically that the defect which arouses the inferiority attitude may be *imagined* rather than real. Consciousness of inferiority may be a long-standing trait of personality resulting from some repressing situation in childhood. In such instances, however, the defensory behavior is of the same general type as in *genuine* inferiority.

Behavior typical of inferiority conflict in the combined spheres of education, wealth, and social standing is illustrated by the following clipping from a sensational Boston newspaper.

[1] Martin points out an opposite type of defense reaction. Many persons extol the wonders of a college education in order to support the belief that if *they* had had such advantages they would be able to rise as high as any one. (*The Behavior of Crowds*, pp. 172–75.)

IN OVERALLS

What perfectly innocent little fellows the Harvard seniors are!

They enjoyed a picnic on Wednesday and dressed themselves in overalls, masons' caps, and working shoes. Then they climbed aboard trucks and away they went.

The majority of these playful little fellows will never wear overalls again; that is why they use the uniform of the honest workingman for a burlesque costume. The majority will spend their days in knickers and their evenings in dress-suits.

There must be something radically wrong at Harvard when none protests this insult to every honest workingman. Why should seniors, about to be graduated as educated American men, consider it funny to wear overalls? Is work so complete a joke to them?

Some day the seniors at Harvard and every other college will understand that those who wear overalls six days a week are better men than they are. When this enlightenment comes, a college will be more than a four-year recreation park for youths who would not know what to do with these years if colleges were closed.

It is, of course, granted that the main protest of this editorial writer is well founded. No one should be allowed to make fun of the customary attire of a class less fortunate than he. It may also be granted that a thought entered the minds of some of these seniors to this effect: "I don't *have* to wear these things, so I guess I'll wear them for a joke." There were, however, other good reasons operative in the selection of this garb. Tradition and convenience demanded that the seniors should be attired in uniform, yet easily obtained and substantial, costumes. The working man's outfit readily served the need. Why was it then that this unthinking jocularity, which probably no senior intended as a slight to the working man, should be made the occasion of so violent an outburst? Why was the 'honest workingman' so certain that the picnickers wished to insult him and to call attention to his inferior social status by wearing his uniform?

The answer is that the working man *himself* had a half-conscious realization that he was inferior. He projected this accusation, which he was struggling to inhibit and which kept haunting him, into the behavior of others. It was the *educated aristocrats* who were making fun of his honest labors. The defensory reaction

follows that in reality "those who wear overalls six days a week are *better* men than they (the college students) are." Here lies the *justification* for the resentment expressed in the paragraphs above. We thus have the following sequence: the arousal of a repressed self-accusation of inferiority; projection of the accusation; rationalization of it as injustice by the compensatory assertion that uneducated men are of a *higher character* than educated; and finally a ridiculous indictment of colleges in general based upon rationalized envy.[1]

b. The Economic Sphere: Radicalism and Conservatism. Uncompensated attitudes of inferiority in regard to poverty and obscurity are reflected in the tendency toward political and philosophical radicalism. Here again the cry is against the injustice of the environment; but this time it is an unfair political and economic régime which has robbed the individual of success. Differences of ability are overlooked and all men are considered equal in merit and deserved reward. From this axiom it is deduced that, since some achieve more wealth and power than others, there must be a basic injustice in the social order. Inferiority within the individual himself is obscured by this rationalization. Radicals are thus usually the 'have-nots,' who demand a change in the *entire system of things*, and who believe that the cure for all social ills is to prevent one man from possessing more of this world's goods than another. The type is too familiar to require illustration.

The extreme radical is devoid of knowledge of his own motives and defense reactions. He represses his self-accusations of economic inferiority and projects them under the rationalization of economic persecution. The lack of insight in such individuals is well expressed by the old army saying: 'It's a case of everybody out of step but Jim.' In personality rating studies a suggestive negative correlation has been found between the trait of radicalism and the possession of insight. That is, there was a tendency for those who were judged as extremely radical to be judged low in insight, and vice versa.[2] This experimental evidence is the more convincing

[1] These defense reactions are, strictly speaking, to be ascribed to the writer of the editorial, who evidently feels a community of interest with the working man. They are in accord, however, with many of the publicly expressed sentiments of the laboring classes themselves.

[2] The writer is indebted for this information to the researches, not yet published, of Dr. G. W. Allport.

because these two traits are not likely to be confused by raters.

It must be remembered that the radicalism here referred to is not that of movements, but of individuals. Many support radical schemes who are not really radically minded. Moreover radical measures are sometimes justified and needed as solutions for political evils. The behavior described in this section is that which belongs to the *radical personality*, the individual who is by nature, and regardless of objective justification, a radical. Such as these are generally actuated by a rationalized inferiority conflict.

The extreme conservative, the man whose personality traits incline him to resist all change, also has his conflicts and hypocrisies. He belongs usually to the propertied class. His interests are best conserved by keeping in effect that régime, however unfair, which enabled him to accumulate and maintain his fortune. He therefore defends the existing scheme upon the grounds of tradition, past experience, and morality. Many of his arguments, like those of the radical, are pure rationalizations. The inferiority conflicts of the radical are, however, of greater import in social conflict than the defense reactions of the conservative. The latter merely clings to a tried system which, in spite of its defects, works after a fashion; the radical seeks, and sometimes accomplishes, a sudden overthrow of the entire political and social organization. Revolution, rather than evolution, is his goal.

c. The Moral Sphere: Reformism. Persons who are struggling against habits and character traits of which they are ashamed but cannot overcome frequently rationalize these evils as due to environmental causes. Often their cognition of moral inferiority is repressed, and the conflict banished from consciousness. There ensues an attitude of projection. They become violently opposed to the evil, not in themselves, but as it is manifested in society. This attitude gives them added impetus in their personal struggle. It also soothes their humiliation by detecting and denouncing the same weakness in others. The vigorous testimonies of religious converts about their victory over the Evil One may convey the suggestion that the struggle against him is still in progress, and that they are merely trying to whip up their courage. Denunciatory preaching serves a similar end. The cry is now against the

vice, rather than the injustice, of the world. One of the most convincing temperance sermons which the writer has heard was delivered by a drunken man who drifted into a church congregation.

From preaching the next step is to overt conflict. The individual becomes a militant reformer. Codes of honor and chivalry are worn upon his sleeve, and he is ready to fight any who oppose these principles. Those who practice secret vices must be hounded out and exposed to the righteous gaze of the public. The outrages recently perpetrated by bands of masked men seem to be of this character. Acts of religious intolerance and racial persecution have been committed by secret organizations in the name of 'true Americanism.'[1]

Not all attempts at reform, of course, are as misguided and ill-conceived as these. Reform *movements*, like radical policies, are based upon many and diverse drives in individuals. Not all persons who advocate reforms are neurotics or busy-bodies. We are speaking here of 'reformism,' not as a policy derived from an objective survey of the moral status, but as a trait of personality. The acts of such 'reformists' are characterized by an irrational intolerance and belligerency. They are more intense and emotional than the cause would demand. Care should be exercised in distinguishing between propaganda from such a source and genuine, constructive reformation. It should also be remembered that, while reforms are often instigated or abetted through conflicts of moral inferiority in individuals, these same reforms may also be objectively justified.

Sociological Aspects of Conflict Adjustment

Conflicts between Egoistic Drives and Social Standards: Group Aspects. For the explanation of covert conflict given in the preceding pages we have had to confine our attention wholly to the individual. In this source alone can we discover the antagonistic settings of the various drives. Leaving the causal point of view, it is, however, interesting to observe the social phenomena which arise by *combining* the similar conflict mechanisms of the members

[1] One of these acts, the whipping of farmers for not attending church, suggests a moral or religious conflict in the perpetrators.

of a group. There are thus collective repressions, rationalizations, and projections. By this we mean, of course, only the summation or massing of the individual mechanisms. We must renounce any suggestion of conflict within the 'social mind' since we have previously been led to reject the *existence* of such a mind (Chapter I).[1]

The conflicts offering the widest collective aspects are moral in their nature. Large numbers of persons, i.e., whole groups, find it difficult to restrain certain pleasurable indulgences so as to conform with the traditional and conventional standards of society. Each individual is endeavoring to repress these tendencies by asserting the socialized attitude. In Freudian terms this attitude is known as the *censor*, a metaphor which in its collective aspects is equivalent to *social censorship*. This concept does not imply an attitude of the 'social mind,' but merely the consensus of individual minds who, in order to support their socialized attitudes, unite in an organized effort and produce laws and regulations of a censorial character.

There results from such combined defense-reactions the enactment of 'blue laws,' which all are compelled to subscribe to in name, but which few obey in practice. All tacitly agree to let one another alone in private life so long as the proper standards are *professed*. The forbidden conduct must of course be rationalized so that it may not seem a breach of the professed principle.

A few years ago an ordinance was passed in one of our large cities prohibiting upon the stage, among other things, any allusions or other matters of a sexual character. If literally interpreted, this ordinance would, of course, have ruled out love themes and would have banished more than half of the content of dramatic art. Obviously it was not intended to bar allusion to such fundamental and unconscious driving forces; but only allusions of a *recognizably* sexual character. Sex life may be portrayed and enjoyed so long as it is not recognized as sexual.

Managers of low theatrical performances are said to follow a rule

[1] Some writers have applied dissociation, repression, and other psychoanalytic concepts to groups as wholes, various social classes pitted against one another taking the place of conflicting motives within the individual. For such Freudian varieties of the group fallacy see M. P. Follett: "Community is a Process," *Philosophical Review*, 1919, xxviii, 576–88; and V. Jordan: "The New Psychology and the Social Order," *The Dial*, 1919, lxvii, 365–68. Freud's notion of 'the censor' lends itself particularly well to the social mind metaphor (*vide infra*). See also A. Kolnai's *Psychoanalysis and Sociology*.

that any joke, no matter how obscene, is permissible so long as it *also* has a proper meaning, that is, a meaning which would make sense to those who are 'too pure' to understand obscenities. In psychoanalysis it is often found that dreams, remarks, etc., have a similar double meaning. In the latter case the 'proper' meaning is a palliative, not to the pure-minded censor of public morals, but to the consciousness of the individual himself. The sinister meaning is unconscious. The censorship metaphor is here interesting and instructive if ultimately interpreted in terms of the individual mind. But the maintenance by rationalization and hypocrisy of a standard above the level of actual practice is not altogether an evil. Such codes prevent open and therefore excessive indulgence in unsocialized habits, at the same time tolerating a necessary amount of release for the fundamental impulse. This form of hypocrisy permits also that elasticity of control needed in the period of transition between an outworn moral code and a new one better suited to the times.

Conflicts between Egoistic Drives and Group Traditions. The type of hypocrisy which permits a deviation from socially transmitted habits or customs is worthy of special notice. Changing environment often brings tradition into conflict with the needs of the present generation. When this occurs special devices are used to rationalize the departure from the past, thus concealing the fact of change. A savage tribe immigrating into a region where the totemic animal is the only source of food develops a ceremony in connection with which it is lawful to kill and eat this animal. The laws of certain Indian tribes required a strict blood relationship in order to be a member of a clan. Provision however might be made, in the case of a man devoid of heirs, for the adoption of a son from another clan. But in order to satisfy the requirement of custom, there had to be a *ceremonial or symbolic birth* of the newcomer into the clan. By a similar ignoring of fact foreign-born individuals were 'adopted,' contrary to law, into the Roman state. Symbolism and rationalization are thus used to conceal the fact of change in the law as well as the fact of departure from an ethical code. In this way a resolution is found for the conflict between the conservatism of tradition and the need for social change.

Covert Conflicts in Hostility between Groups. When the members of one group are held in fear or bondage by another group or by a despotic government there will result in each individual a conflict between hostile tendencies (struggle) and the inhibiting fear of punishment (withdrawal). Group phenomena then take place in which the repressed drives of individuals are *released in a veiled manner*, and punishment thereby avoided. Anthropologists have reported instances of subjugated tribes who maintained their old ceremonies, but with the outer aspects so modified as to present to the conquerors a meaning altogether different from the true one.[1] This phenomenon is parallel with the two-sided jokes of the burlesque stage. It resembles also the symbolization of the neurotic consciousness, except that here the symbol deceives another person, whereas in hysteria it deludes the individual himself. The concept of social censorship is a fact in the former case but a figure of speech in the latter.[2] Burning or hanging a hated person in effigy is another method by which the thwarted impulses of a large number may be released. Here the symbol makes clear to all concerned the nature of the motive; at the same time it violates no established law.

Is Conflict a Symptom of Socialization or Degeneracy? The question has been raised whether the numerous conflicts and maladjustments described in this chapter are not a sign of the weakening of the social order. One force in all covert conflict is society, or rather the socialized aspect of the individual. In some instances socialization opposes the free operation of food, sex, and struggle interests. In others it represents desire for esteem and self-respect in conflict with inferiority. It may be urged therefore that the social pressure upon the individual has reached too high a pitch, that it

[1] See Rivers, W. H. R.: *Instinct and the Unconscious*, p. 239; also a lecture on "Dreams and Primitive Culture," by the same author, published by Longmans, Green & Co., 1918.

[2] The metaphor of the censor is however useful in showing the close relation between the conscience of the individual and the moral code common to the group. That which produces a conflict within individuals is considered tabu for society as a whole, and vice versa. Exogamy, a custom widespread among primitive races, arose as a defense against incestuous love fixations within the family. Incest is thus tabu not only within the mind of the individual, but through a tribal law imposed on the individuals as if from without. In this connection the student should recall the social aspects of moral and self consciousness discussed in Chapters XII and XIII.

has overstepped the limits to which human nature can safely suppress its 'cave-man' tendencies in the interest of group life.

In support of this challenge attention is called to the seeming increase in insanities and psychoneuroses; to the 'shell-shock' disorders in the late war; to the weakening influences of the modern family; to the excesses of dancing and of motion-picture themes; to fanatical and intolerant laws incapable of enforcement; to political hysteria; to suppression of free speech; to deportation of radicals; and to numerous crowd phenomena through which neurotic repressions are released in every conceivable way. Such phenomena signify to some observers an over-susceptibility of the individual to the 'voice of the herd.' There is urgent need for the assertion of fuller individual freedom if democracy is to be saved from its peculiar peril of the rule of each by all.[1]

Although there is much to be said for this view, it is still possible that the evils mentioned are not *necessary* accompaniments of contemporary civilization or of the socialization of mankind. Mental diseases exist among primitive as well as civilized peoples. It is doubtful also whether they are more prevalent among civilized races nowadays or merely better known. Many conflicts result from fear or shame inculcated in children by unwise parents. Such methods are not necessary to the present social régime. Violent attachment to parents, the most frequent element in conflict, is surely not essential to the socialization of the individual. It is merely the result of the neurotic repressions and jealousies of parents, coupled with ignorance of mental hygiene. There are highly moral and intelligent families in which these tendencies do not occur. There are also countries (for example, England) in which the crowd-engendered intolerance and moral inferiority conflict now rampant in America are but insignificant evils. Educational psychoanalysis, insight into defense reactions and rationalizations, and independent adherence to an *objectively determined standard* — these, as Martin rightly urges, are the antidotes for covert conflict in modern society.

Finally, let us remember that socialization is in itself a goal toward which we are striving. The original reactions of individuals

[1] See Martin's *Behavior of Crowds* for a brilliant exposition of this thesis.

must be *modified*, not repressed; and this modification makes possible the enjoyment of life by each individual at the same time that it permits equal opportunities for happiness to others. The drive toward this goal, though it involves conflict, is in itself a hopeful symptom.

To oppose a strong force we must have a force of equal power. The socialized responses, by their very ability to conflict with the most powerful drives of human nature, demonstrate their right to a fundamental position. If our struggle reactions are blocked, it is because the aversion to hurting others has become a part of our very natures. If we flee from reality through inferiority conflicts, it is because we desire so ardently the esteem and approval of our fellows. If children are loved too much, it is with the thought, however deceived, of helping and protecting them. The same blocked love impulse and protective behavior when turned outside the family are often of the highest service to mankind.

The various drives involved in the conflicts we have described are in themselves good. The evil lies in the unwise controls by which they are brought into antagonism with one another. Covert conflict, while presenting a vast field for the amelioration of human life, is in itself an indication that socialization of a wholesome character may be achieved. The adjustment of conflict within the individual is thus an indispensable element in social progress.

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CHAPTER XV

SOCIAL BEHAVIOR IN RELATION TO SOCIETY

The Place of Social Behavior in the Social Sciences. Social psychology, as defined in Chapter I, is the science of the social behavior and social consciousness of the individual. This point of view has been maintained fairly consistently up to this point. Whether the situation studied has been the face-to-face relation, the group, the crowd, or the complex adjustments of family and social life, the focus of attention has always been the individual in his relation to other individuals. It is the purpose of this closing chapter to apply the laws of social behavior and consciousness to somewhat broader fields, such as social groupings, institutions, and the movements and changes of society. We enter here the domain of the social sciences, and particularly that of sociology. Since all behavior phenomena of groups are reducible to mechanisms of individual behavior in the social environment, the relation of social psychology to the disciplines which treat of these higher aggregates is a fundamental one. This relationship will be developed in detail in the following pages.

Social Aggregates: Unity

Social Behavior in Relation to Population. The character of the physical groupings of individuals has an effect, through the interchanges of social behavior, upon the development of individual traits. The isolation of inhabitants of rural districts diminishes both the consciousness of the group and social attitudes reflecting the obligations of the individual to the group. Zeal for securing approval and for coöperation through awareness that others also are laboring for the good of the community is less intense than in the city. As pointed out by Professor Groves, the monotony and isolation of farm life fosters a suggestibility toward the newspaper and other propaganda coming from centers of great population. The prestige of numbers causes a considerable drift of the children

of farmers toward the city. The more energetic, and those fitted for rapid interchanges of social stimulation and response seek urban life, leaving the slower, less mobile types for the rural community. City life furthermore offers spheres of achievement for the more ascendant and ambitious youths from the country. Slowness in reaction is of course developed in succeeding rural generations by the tempo of social stimulations encountered by the individuals in early years, and perhaps by heredity.

A serious result of the lack of group control in rural life is the defect of socialization within the family. The sex drive, unconditioned by the restraints of culture, and abetted by the direct example of nature, becomes too precocious in its expression. The drudgery of both parents, moreover, allows little possibility for the development of the finer traits which grow out of intimate and affectionate association with the offspring (cf. pp. 363–64). City life provides many opportunities for contact and discussion, and therefore develops inventions and progressive measures more rapidly than the country (cf. p. 289). Novel ideas and the production of geniuses are less frequent in rural than in urban communities. Movements are now on foot in some localities to supply the lack of social attitudes and discussion by converting the country church and school buildings into social centers. Although city life is on the whole more highly socialized than rural, it too exhibits some tendencies of distinctly anti-social character. Mob-like behavior is frequent both in actual crowds and in the 'stampede of public opinion.' Crowding, especially in the poorer sections, heightens competition and develops in children an aggressive, elbowing ascendancy quite opposed to the ideals of good citizenship.

The small town also presents definite problems of social behavior. Its crowds and publics consist of individuals who all know one another. The attitudes therefore of conformity and conservatism are more firmly established than in larger centers. Subservience to class made morals and opinions in small towns has been satirized in recent fiction. Loves and hatreds are intense; and the prevalence of primary groups gives play to unmitigated gossip and scandal-mongering. This very emphasis upon social self and

community opinion, however, affords possibilities for constructive civic organization. Unfortunately much of it is at present directed toward pretense of city life and creation of a caste which looks down upon the neighboring country-dwellers (Douglass). This may represent in part a conflict against recognition of cultural inferiority to the city.

Primary Group and Community. Sociologists have justly emphasized the function of face-to-face groups, such as the family and the neighborhood group, in the socialization of behavior. The importance of the family in this connection has already been discussed. These groups also provide a means for transmitting the culture and traditions of society. School children frequently form face-to-face groups of a fairly lasting character. Groups of this sort are usually of one sex, and are necessarily small, because each newly added member, having a possibility of disagreeing with every other member, increases the chances for disharmony by a number equal to the membership already present (Clow). These groups have a pedagogical value for inculcating moral attitudes through impression of universality and circular reinforcement among their members (pp. 305–07).

Communities are small aggregates whose members are governed by attitudes and modes of conduct which they recognize to be universal within the group. Social projection, conformity, and the social self are prominent in the community attitude of individuals. The impression of universality is strengthened if there is sufficient organization to bring the individuals together in meetings. Such gatherings therefore greatly promote spontaneous coöperation in public enterprises. In most cases, however, personal leadership is necessary in order to direct the various crowd mechanisms within the community toward some definite goal. The egotism fostered by the crowd situation (or by one's imaginal public) serves here as a useful aid to coöperative effort (p. 316). Such egotism takes the form of 'local pride.' Dr. Boodin considers these small, closely knit publics to be the true moral units of civilization.

Caste and Social Class. Aggregates based upon attitudes of superiority toward outsiders have been conspicuous in the social order of nearly every nation. In certain Oriental countries, and

in some nations of the Occident, hereditary caste systems have erected impossible barriers against aspirants of humbler birth. In more democratic countries the consciousness of acquired social class is often instilled into the minds of the young before they leave the family circle. Sharing in the impression of superiority conceived to be universal in his group, the member of the upper class feels securely at ease. If he becomes impoverished, immoral, or degenerate, or if he is personally a nonentity, his badge of caste saves him: he is still reckoned as a member of one of the 'best families.' Rationalizations of this sort serve as defenses against the perception of deeper truths.

An important causal factor, and one usually overlooked, is the attitude toward the higher caste of those not in the caste itself. This attitude is one of respect and submission, tinged with admiration and perhaps envy. The egotism of the aristocrat feeds directly upon the self-abasement and submission of the proletarian. To abolish obeisance to caste would be to abolish caste itself; for the real nature of the phenomenon is an attitude in individuals, and not an objective social fact. True nobility must reside in persons, not in classes. Superiority which is ascribed to a group rather than to individuals is indeed a fiction (cf. the discussion of 'collective mind' in Chapter I).

Class distinction of some sort is perhaps inevitable, because innate or circumstantial inequalities among individuals will always enforce recognition. Provided the system is not too rigid to prevent rise through merit, it is not wholly an evil. So long also as the submissive attitude of the lower order does not become a hostile one there is no menace to social unity. But where resistance to recognition of inferiority springs up, radical action, and even revolution, are imminent. Thus in England a peaceful class system has existed for generations, while in America, with its widespread and crowd-like conflicts, the very beginnings of class recognition bring disruptive changes. Economic struggle is rapidly becoming a class warfare.

Occupational distinctions of class deserve a word of comment. Efforts are made so to elevate one's vocation that it shall be a credit to one's self. There are perhaps few who would not like to

be listed as a member of one of the recognized professions.' That failing, a trade union with a long and imposing name will suffice. Professional standards in medicine, law, and academic fields guard the prestige of the calling against unworthy aspirants. The use of titles is punctiliously exacted in certain quarters. 'Professional etiquette' and 'ethics' are frequently rationalized names for class made morals and distinctions of vocational caste.

Race and Racial Adjustments. The psychological differences between races are just beginning to attract the attention of scientists. M. Le Bon mistakenly held that there is a gap between superior and inferior races amounting almost to a distinction of species. The vast differences in cultural adaptation between primitive and civilized races are to be ascribed as much to 'social inheritance' and environmental factors as to innate difference of capacity. It is fairly well established, however, that the intelligence of the white race is of a more versatile and complex order than that of the black race. It is probably superior also to that of the red or yellow races.[1]

This discrepancy in mental ability is not great enough to account for the problem which centers about the American negro, or to explain fully the ostracism to which he is subjected. High emotionality and defect of inhibition are supplementary causes. The truth of this statement seems to be attested by a greater variability of blood pressure in the negro than in the white man,[2] as well as by overt indications. Investigations of these functions and of the possibility of educative controls of emotion are urgently needed at present.

The heart of the negro question, however, is to be reached, not in the sphere of intelligence or temperament, but of sociality. The negro has not been educated socially; his drives have not been

[1] Various investigators rate the intelligence of the full-blooded negro as roughly between two thirds and three fourths of that of the white race. In the scores of the army mental tests the standing of the drafted negroes was very low. Experimental data regarding the intelligence of the Mongolian and American Indian races are meager. From present indications it seems that both these racial stocks are below the white in intelligence. The early and remarkable development of Oriental civilization is, however, a fact which indicates the need of caution in classing the Chinese and Japanese among the races which are inferior to the white in mental capacity.

[2] Researches of Dr. W. M. Marston (unpublished).

conditioned or modified by agencies of social control. The reason for this seems obvious; but it is remarkable that it has so frequently been overlooked. In preceding chapters we have observed that the time for socializing the fundamental activities is *childhood*, and the place for doing it is the *home*. In post-adolescent years, or even in later childhood, the inhibition of anti-social trends and the formation of socialized habits become almost impossible. The reason why the negro tends to be asocial is that, growing up in an environment of poverty and ignorance, where stealth and depredation are often the accepted means of livelihood, he has had no opportunity for developing socialized traits.

We often hear the charge that the more you educate the negro, the worse he becomes. This is unfair; for the negro, though less gifted than the white man, is highly educable. His progress in fields of practical education has shown this. The whole trouble has been that the moral side of his education was not begun soon enough. He becomes literate and learns the skilled trades; but the deeper foundations of early character training are lacking. The aim, therefore, should be not only for *more* education, but for *earlier* education. We need not so much colleges for members of the colored race as homes in which they can be properly reared. Specifically we need organized supervision of the moral influences brought to bear upon young negro children. This, to the writer's knowledge, has never been seriously attempted. If it can be accomplished, a great amelioration will probably occur in the racial situation of this country. The *laissez-faire* insistence upon the innate hopelessness of the negro has been one of the obstacles to such a rational procedure.

Attitudes of suspicion and hostility are shown in many localities not only toward members of different races, but toward immigrants of other nationalities. Crowd influence in the public produces its usual effect of intolerant conservatism. The cry is for exclusion or else for immediate Americanization. There can, of course, be no true nation unless a recognition of common interests and ideals by each individual binds the whole body politic together. But this fact provides no evidence that the only desirable form of culture is that possessed by the 'uncontaminated' American. Solidarity

of this narrow and provincial sort serves in some sections of the country as a defense against the recognition of backwardness in education and culture.

Nationality. The psychology of nationality has been well discussed in recent literature. Nationality transcends the bounds of racial and geographic origin and even of language, though homogeneity in these respects naturally favors its development. Professor McDougall considers national consciousness to be the extension of the 'self-regarding sentiment' to include the entire nation, so that a man himself feels proud when his country prospers, and is personally angered when his country is insulted.[1] There is in this nothing which necessitates considering a nation as a psychological entity or as possessing a 'collective' or a 'group' mind. National honor is located solely in the individuals of the nation. Insults to the flag bring personal resentment because this emblem has become a conditioning stimulus for the individual's attitudes of self-esteem and personal security. An abasement of the flag therefore thwarts these attitudes and evokes the struggle response.

National consciousness is the consciousness which the individual has of his nation as a whole. It consists of imagery of a vast number of people, of awareness of traditions which he supports in common with all the rest, and of present interests and ideals toward which all are disposed in the same manner as he. This overwhelming impression of universality combines with the early teaching of patriotic attitudes to give nationalism a supreme power over the behavior of the individual. The exaltation of self-consciousness through identification with the nation plays no small part in this control. Hatred and struggle against a common enemy bring the impression of universal patriotism and coöperation into the focus of attention, and thus foster national solidarity.

[1] Compare Professor Pillsbury's conception of the 'national mind': "... There is one sense in which the nation does assume many of the aspects of a person. This is as an ideal center of reference for emotions. The nation, as a concept, is a reality. About it the emotions of the members cluster. Increasing it ... gives them emotions of joy, impairing its existence ... gives sorrow or anger very much as does the waxing or waning of the individual's own ideal self." (*The Psychology of Nationality and Internationalism*, p. 222 f.) This writer later rejects the idea of the nation as an objective entity separate from individuals.

The Theory of Society

The Origin of Human Aggregation. The topic of nationality leads naturally into the broader question of human society itself. Original social aggregates among mankind were probably kinship groups. In the overlapping of generations and permanence of family ties we have a sufficient explanation of the beginnings of gregarious life. Among primitive peoples kinship is still the basis of social organization. Reaction within the family provides an origin for sympathy, susceptibility to social stimulation and approval, coöperation, control, and other functions necessary for social union in the larger aggregates. There is little need, therefore, for a theory to explain the origin or existence of social groups; our interest lies rather in describing and interpreting the nature of their communal life.

The Nature of Society: Theories of the 'Ego-Alter' Type. We may illustrate in their extreme form two opposed conceptions which have been prominent in the theory of social aggregation. The viewpoint of Le Dantec represents the first conception. This writer maintains that egoism, or *self-interest*, is the basis of all society. Each behaves solely for his own benefit. For defense against enemies, however, individuals join into a society, and allow their 'egos' to be somewhat 'deformed' by necessary concessions to others. Organized coöperation is thus maintained for the individual's good. Altruism is a rationalized hypocrisy. There are set up customs and laws the origin of which in self-interest must not be questioned too closely. Such controls are therefore regarded as 'Metaphysical Absolutes.' This view is really a modern psychological version of the social contract theory.

The reverse of this notion is exemplified in the theory of Dr. E. W. Hirst. He conceives social union as originating in the *complex familial instincts* for the recognition, love, and care of offspring. These 'social instincts' are extended to wider circles than the family. As the pregnant mother in feeding herself also nourishes her child, so the welfare of others is instinctively sought as a part of our own welfare. "Conscience," says Hirst, "is tribal government set up in the human breast."

The truth of the matter probably lies between these two doctrines. Hirst's view that the individual is innately socialized lacks adequate foundation. Love fixations in the family, though they may become the basis of love for fellow man, are not social instincts. On the other hand Le Dantec's notion of the permanently unsocializable nature of man is equally mistaken. Apart from self-interest human beings acquire a definite drive and interest in promoting the welfare of others. Le Dantec's 'deformation' is really the normal form of modification of the prepotent responses.

Imitation and Sympathy Theories. Tarde, who has been called the founder of social psychology, was impressed with the repetitive character of all natural phenomena. Society was considered by him to be based upon uniformities of behavior spread throughout the group by *imitation*. Inner meaning or spirit was, he thought, imitated before the outer form of culture, and intellectual elements before material. There is also imitation of the higher caste by the lower. Tarde's theory, though it has inspired notable successors, is psychologically antiquated. Imitation as a cause of behavior is now largely discredited (cf. pp. 77, 239), while greater emphasis is placed upon the non-imitated original drives underlying the acquisition of both uniform and unique behavior.

A theory based upon *sympathy between similarly constructed individuals* has been developed by Professor Giddings. 'Like-mindedness,' the sum of all similar feelings, thoughts, and acts, is the basis for the acquisition of a *consciousness of kind* which knits the group firmly together. More recently Professor Giddings has restated his conception in the following behavioristic manner under the title of 'Pluralistic Behavior.' The caw of one crow is more readily stimulated by the caw of another crow than by any other agency. Association follows this line of least resistance (greatest similarity), and individuals having like mechanisms of response tend to be drawn together. A stimulus, if strong enough, produces like responses in like organisms, a fact which gives rise to social solidarity. Circumstantial pressures, however, introduce new elements and dissimilarities; hence arises a conflict resulting in social change and progress.

The notion of consciousness of kind has had a well-merited in-

fluence. Without recognizable similarities of expression, sympathy would, on either the instinctive or the conditioned-reflex theory, be impossible. Consciousness of kind is an elementary form of the impression of universality: it is the awareness of that universality of human nature which guarantees the essential agreement of all individuals.

For 'pluralistic behavior' there seems to be less empirical support. Human beings associate not to evoke like responses, but to react to one another in all ways, like or unlike, with the social behavior which best satisfies their needs. Social coördination is often served by *unlike* reactions, as in the ascendance of the parent and submission of the child. Progress and change involve conflicts not between like and unlike, but between the new and the old as vested interests of opposed individuals. In some respects, however, the theory is suggestive. Similarity of action-patterns among individuals affords a ready basis for forming ear-vocal responses in the transmission of language (pp. 183, 194). Language of course is fundamental in social union. Similarity of nervous structure also enhances social facilitation and suggestion in groups and crowds. It is in the direct social stimulation of face-to-face relationships that the theory seems inadequate.

The conclusion we may draw from the present discussion is that no single theory is sufficient to comprehend the facts of human aggregation. Given the bare existence of human beings in one another's presence, they may be expected to develop an intricate and far-reaching system of social stimulation and response. This system furnishes the data for the entire science of social psychology. It cannot be formulated into a single theory without over-simplification.

Social Order: Organization and Control

The Nature of Social Control. Orderly social life necessitates a certain degree of subordination of individuals to one another and to the regulated institutions of society. Without such control unity and coördination would be impossible. Social control is sometimes regarded as a purely external phenomenon, as if the controlling pressure were applied physically to individuals, moving

them as a child moves his dolls. This conception is misleading. The mechanism of control lies *within* the individual. The whip controls the child because it evokes withdrawing reactions, first from the whip, and then from the forbidden activities in connection with which it is applied. The mere presence of the whip later has the effect of causing withdrawal from the contemplated misdeed; it has become a conditioning stimulus for the inhibition of wrong-doing. In the same way the punishments of the law condition and control the withdrawing responses of individuals. Punishment through the threatened loss of social esteem (social self) serves a like purpose. Were it not for this conditioning of primitive responses and of inhibitions, social control would be impossible. Society uses the fundamental responses of its members in order to control them.

Throughout the preceding chapters we have noted instances of control in face-to-face relations. Animals drive away their enemies through snarls and show of teeth, stimuli which by conditioning have acquired the power of evoking the withdrawing response of intruders. Monkeys control one another through the conditioned stimulation of the sexual reactions (p. 162). Children gain proficiency in speech by using language to control their parents (p. 187). Suggestion illustrates a pure form of social control, and conversation an imperfect form. The 'hurt cry' of the child is a reaction used to coerce others. Infantile control of others persists as an adult interest in evoking reactions, as shown in face-to-face sociability groups (p. 287).

We proceed now from these face-to-face coercions to the impersonal and organized social agencies which control each person for the interests of all. First, however, we must describe a few intermediate and unorganized forms. These include fashion, fad, craze, convention, custom, rumor, public opinion, and mob rule.

Unorganized Controls: Fashion. Fashions originate with garment manufacturers and milliners who exploit the controls inherent in social behavior for their personal interests. Certain persons who seek to assert their individuality and who crave the superficial admiration of others, quickly don the new style. These are usually the more suggestible persons, who first succumb to the display

models and advertisements of the merchant. When a few appear in the new mode the impression of universality and social conformity begin to work upon the general public. There arises an unthinking impression that *all* are adopting the style. Exceptions are overlooked. Social conformity (p. 278) swings the individual into line, and completes the attitude to purchase the new attire. The first stage of suggestion is thus accomplished (p. 245). These combined attitudes are commonly expressed by the phrase, "they are wearing." The average person seeks to be a follower rather than a leader of fashion. He aims at conformity rather than differentiation. This fundamental and unreasoning conformity is generally rationalized by saying that one does not wish to appear shoddy, careless, out of date, or conspicuous.

Distinctions of caste allow the manufacturers to keep the styles profitably moving. Those of the humbler level seek to identify themselves with the rich and exclusive by simulating the garb of this class.[1] These in turn, finding their exclusiveness threatened, hasten to adopt a new mode. Thus pursuit and differentiation follow one another in endless succession.

Fad and Craze. The following of fashion and other popular interests sometimes reaches an emotional intensity suggestive of crowd behavior. This is the phenomenon of fad or craze. Imaginal factors in the crowd-public become very vivid. 'It's all the rage' is the popular statement of the impression of the universality of these excitements. A compulsion toward conformity is felt, not unlike that in the crowd situation. Sociologists writing upon fad and craze have slighted the fact that these controls *originate* in the basic reactions of the individual. Fads such as bobbed hair, rolled stockings, feminine smoking, and general 'flapperism' are based upon the desire to arouse the interest of the opposite sex. Much of the present-day superficiality seems to express a persisting infantile drive for compelling attention through self-exhibition (cf. p. 287). Financial crazes represent a combination of prepotent and derived reactions; hunger, sex, social control, and desire for distinction being the predominant interests. Although particular fads and crazes rest largely upon individual drives, it is true that habits of

[1] Cf. p. 367, and footnote.

susceptibility to craze stimulations may be developed. Thus, as Professor Ross rightly contends, one craze predisposes the public for another.

Convention. One is influenced toward conformity not only by the fashions and fads of his contemporaries but by their manners and conduct. The individual forms the impression that certain *modes of action* are universal, a belief expressed by the phrase 'they are doing,' or 'it is being done.' Since, however, acts are more important than styles, conventional usage is more stable than fashion. The tendency is to render permanent certain socially efficacious forms of behavior such as rules of etiquette. Acts of thought and attitudes upon fundamental questions also come under control of the habit of conformity. Widespread rationalizations sometimes acquire the force of conventions. Conventions may outlast their generation and pass over into *customs* handed down through social tradition. The two controls are similar in that the attitude of social conformity compels obedience to each. The attitude of conformity may be expressed toward either ancestors or contemporaries.

Custom. The successive influence of one generation upon another in matters of conduct is known as custom. The force of custom lies chiefly in the fact that its edicts are habits formed in the individual from earliest childhood. Custom acquires the additional force of convention. It goes deeper than the latter, however; for whereas convention is based upon the simple attitudes of universality and conformity, custom has not only these factors to enforce it, but early habit fixation and strong social disapproval in case of departure from the customary mode.

The explanation for the tendency to enforce customary behavior in society is to be found in habit. Breaches of custom seem objectionable to us chiefly because they do violence to long standing habits. Our dislike of such conduct is frequently expressed by the phrase, 'That's not the way I was brought up!' Professor Humphrey has given the most satisfactory account of this process. Our own acts of approach and avoidance have become conditioned, just as our feelings are conditioned in sympathy, by the sight of the same behavior in others. If my fellow performs a certain

action, his behavior suggests (tends to evoke) the same response in me.[1] But this influence, if against the rule of custom, would go contrary (antagonistic) to my previously formed habit of response to that situation; hence an unpleasant thwarted feeling, and a struggle to prohibit this disturbing suggestion.[2] This attitude of disapproval may be expressed in the words 'he breaks my habit.' Pressure is accordingly brought to bear upon the non-conformist to eliminate his disturbing stimulation to others. Overt social disapproval thus allies itself with the attitude of social conformity to enforce adherence to custom.

Rumor. Hearing a remark from two or three distinct sources, or hearing it with the added suggestion that 'they are saying' it, generally produces in the listener an impression that the statement is being *universally* accepted and widely discussed. Submission to great numbers (attitude of conformity) causes the remark to have the force of a suggestion. Though heard only as a rumor it is believed and passed on to others *as a fact.* It is not, however, communicated with accuracy. Faulty assimilation as in conversation (p. 289), thought habits of the transmitter, personal repressions given escape through magnifying unconventional details, and effort to create a sensation, — these are some of the factors which account for the distortion of rumor during its spread.[3]

Public Opinion. The term public opinion usually signifies some conviction, belief, or sentiment common to all or to the great majority. The distribution of opinion on a question, excluding the bias of parties or factions, probably follows the general form of the probability curve. The opposite views on any issue are represented by fewer and fewer individuals as we approach the extreme forms of these views. The moderate position expresses the opinion of the majority. This high peak of the curve is the consideration

[1] This is due, not to instinctive imitation, but to the fact that I have observed others making the same movements formerly at a time when I was also making them; hence the establishment of this movement as a conditioned response to the sight of some one performing it.

[2] "The Conditioned Reflex and the Elementary Social Reaction," *Journal of Abnormal Psychology and Social Psychology*, 1922, XVII, 113–19.

[3] Detailed illustrations of the rumor process may be found in the following works: Swift, E. J., *Psychology and the Day's Work*, ch. 8; Smith and Guthrie, *General Psychology*, p. 236; Jung, C. G., *Analytical Psychology*, ch. 4.

which guides political leaders in their quest of public favor. It is also exploited by the press. Revolutionary mobs, crowd-like subservience to party principles, and like phenomena destroy this sober balance between opposing extremes.

Public opinion is merely the collection of individual opinions. It has no existence except in individual minds; and these minds can only conjecture what the general consensus is. Like the other unorganized forms of social control public opinion acquires its power through the attitude of the individual. This attitude is one of ascribing universality to certain convictions and then supporting them strongly in order to conform with the supposed universal view. Newspapers and journals are self-constituted exponents of that which they assert to be the voice of the public. Their assertions are often hasty generalizations and sometimes deliberate propaganda. By pretending to express public opinion they in reality create and control it (p. 309). The illusion of universality may of course be used to establish a popular acceptance of *enlightened* views. The press thus has great possibilities, and indeed responsibilities, for promoting solidarity in constructive citizenship.

One of the most serious evils of American democracy is the exaggerated susceptibility to crowd-like control of private opinion. Impression of universality and the conformity attitude are so powerful that liberty of thought is scarcely tolerated. This fettering of free expression continues as an after-effect of the censorship necessary in the World War. Crowds and crowd-like publics dominate the thinking of the individual and tend to stifle independence of judgment.

Mob Rule. The processes of control operative upon the members of assembled mobs have been treated in Chapter XII. Mobs also attempt to control through violence all those whom they are pitted against. Small mobs, under the leadership of probable neurotics, commit coercive acts usurping the power of government. Racial and class hatreds, inferiority conflicts, and other mechanisms of maladjusted individuals motivate these efforts for social control. The crowd attitudes persist after the disbanding of the actual mob, leaving an emotional and intolerant public.

In a lynching mob, as exemplified by a lynching for sex assault,

the following elements may be noted: (1) There is an immediate, sympathetically aroused, furious attack, as though the injury had been done to one's own family instead of to a neighbor's. (2) There is an attitude to protect one's family and the community from similar assaults in the future by controlling potential criminals through fear of death. This is the essence of rule by mob law. (3) Attitudes of male chivalry demand punishment of the offender. These attitudes take belligerent form partly because they are based upon rationalized sex jealousy and the double moral standard (p. 348). A genuine sexual assault committed by a woman upon a man would be regarded probably with humor rather than moral indignation. Committed upon a woman, the same act, through our man-made social standard, arouses horror and justifies vengeance through the life-blood of the offender. If the racial factor is present, a fourth element may be added in the desire to assert both the supremacy and the 'superiority' of the white race. This attitude makes a sex assault committed by a negro seem more heinous than the same deed done by a white man.

Lynching as a form of social control is an unmitigated blemish upon civilization. Yet it must be noted that the first two motives described above are in themselves far from evil. They contain the basis of sympathy, social unity, and government. The great harm of lynching lies not so much in the punishment given the offender as in the fact that he is denied the right of a fair trial. This alone is sufficient to condemn the practice. It should be remembered, however, that definite and powerful drives of human nature motivate such punishments, drives which are not evil but wholly natural. Overweening sentimentalists, therefore, who denounce lynchers as lawless barbarians who ought to be hung for murder, contribute nothing to the solution of the problem. So long as there are races or individuals too poorly socialized to be controlled by any power less than fear of immediate death, this form of punishment will probably continue to exist. What is needed is not righteous indignation, but a deeper psychological understanding of the whole matter.

Before leaving the subject of mob rule it should be noted that the mechanisms of control through crowds may be used for

socially constructive ends. If we omit the intolerance arising from mental conflicts released in mass movements, we shall find that the other factors, such as social facilitation, impression of universality, conformity, suggestibility, and social projection, are valuable means for enlisting coöperation. Campaigns for building schools and hospitals, patriotic enlistment and self-sacrifice in war, constructive pride in community, and reformation through evangelistic revivals are a few results of the more favorable influences of the crowd. If combined with insight and civic education, and if used for the true interest of humanity, such influences make for permanent as well as present achievement.

Control through Institutions. *a. Government.* The most stabilizing of social controls are exerted, not by the changeable sweep of public opinion or mob rule, but by the organized and regulated institutions of society. Foremost among these are government and law, education, and religion. Law is largely custom which is enforced not merely by threatened disapproval, but by the more drastic punishments of governmental control. The body of people upon whom such controls are operative make up the *state*. While following roughly the lines of race and nationality, the state is not coterminous with these groupings. The control exercised by government has usually been one of fear. Withdrawal from wrongdoing or inhibition of anti-social acts has become established by punishment administered upon the commission of these acts. The government, standing permanently ready to inflict pain or deprivation upon the wrong-doer, forms a control which has the full strength of the avoiding responses. Institutional control, like all other forms, is thus established by conditioning of mechanisms *within* the individual.

Contemporary sociologists are unanimous in their plea for the socialization of government, and for rendering its control positive and constructive rather than purely prohibitive. Government should be considered not as a control separate from and above the people, but as a working expression of each individual's will. The larger interest must be made personal (Follett). Genuine democracy means not merely a list of rules to keep one person from overriding another, nor yet the balancing against each other of the

representatives of opposing factions. It means rather the coöperation of all individuals and parties toward the common good. Officials should be elected with a view to their ability to govern *all*, not as champions of a particular group of interests (Kern).

Such ideals would require a widespread campaign for social participation among the mass of voters and citizens. There must be a fuller socialization of all the drives, not merely of the avoiding reactions. The pleasurable, or approaching responses must be conditioned by situations giving opportunity for social service. A drive for obedience to law and regard for others is as necessary as a fear of disobedience. Desirable as this goal may be we must admit it to be very difficult of attainment. An extensive program of public education would seem to be the first step. The school presents a valuable opportunity for socialization which will be discussed presently.

Revolution, or sudden change in government, has been ascribed to the failure of this institution to adapt itself to the progressive changes of economic and social life. Immobility leads to sudden and complete disruption of political control.[1] A clearer notion may be gained by considering revolution as an overt conflict resulting, like all conflict, from an attempted thwarting of the needs and actions of individuals. The old government maintains an active struggle to suppress all measures aiding the champions of the new order, measures which would reduce the advantage and prestige of those already in power. The radicals struggle to change the form of control in such a way that *their* desires can be more readily satisfied. Such change is sought partly as a compensation for inferiority 'projected' as a charge of injustice against the régime in power (cf. the radical personality, p. 372). On the part of many adherents it is also an objectively justified struggle against actual political oppression.

The occurrence of a revolution depends upon several factors. The most important of these are: (1) the degree of thwarting pressure exercised by the party in control, (2) the arousal of inferiority conflict in the subjugated class, and (3) the waning of the strength of the upper power. Martin assumes the continual presence of

[1] Ellwood, C. A.: *Introduction to Social Psychology*, pp. 170–77.

crowds all struggling for supremacy. He lays great stress upon the third point mentioned, showing how, as soon as the controlling faction weakens or disintegrates, the 'radical' crowd, closely united through struggle, drives it out and usurps the government. Being essentially a crowd, this party proceeds to govern with all the intolerance, hatred, and lack of insight of the crowd man. At length it too goes to pieces through failure of its 'abstract principles' to give free play to the desires of all its members.[1] This view of revolution and its consequences applies no doubt to some political upheavals, for example the French Revolution; but it is by no means a universal sequence. Revolution, it is true, does not in itself establish a proper government; but it does 'clear the air' and allow an opportunity for unhampered political thought. Mob control is a danger that arises pending the selection of leaders who can administer the government wisely and constructively.

Revolution is a beneficial social change if it represents the struggle of the large majority against the tyranny of the few. It is detrimental if brought about by a few of the radically minded who impose their will upon the majority. The same estimate applies to changes not in the government itself, but in the character of the legislation which it enacts. A good example is the recent prohibition amendment in this country. It is clear that a wholesome and needed drift of opinion toward restriction of alcoholic liquors had been developing during the years preceding this legislation. This represented the wish of the substantial majority. The passage of this sudden and drastic measure, however, and the violence of its attempted enforcement in many quarters, suggest the defense mechanism of the neurotic in whom alcohol is bound up with mental conflict. Agitators of this type exploited the temperance sentiment already present in launching their extreme campaign. The impression of universality and attitude of conformity operated in swelling the ranks of prohibition supporters. It was indeed difficult for a voter or a legislator to cast a ballot against what he felt to be the opinion of the vast majority of morally minded citizens. As a result of this crowd-like legislation widespread discontent is felt. The law is openly violated in many places. Judi-

[1] *The Behavior of Crowds*, chs. 7–9.

ciaries have posted placards warning the people to support the government against the collapse of legal authority. A disruptive movement is imminent which may do ultimate injury to the cause of temperance as well as to judicious reform in other directions.

We have already discussed the function of government in protecting society by the control of anti-social members. Control of enemies *without* is its second fundamental purpose. Such protection has been traditionally maintained by powerful armaments through which respect for the rights of the individuals of the nation has been enforced upon other countries. This form of control represents the conditioning of the withdrawal responses upon a nation-wide scale. Intimidation, however, sometimes fails to avert aggression, and war ensues. Warfare is a struggle resulting from the thwarting of the prepotent drives of the individuals of one nation by the governmental power of another. We have previously seen that there is no instinct to fight merely for the sake of fighting (p. 58, footnote), but that the sole cause of struggle is the thwarting of the drives of one individual by the behavior of another. The only way to eliminate war is therefore to eliminate aggression. Reduction of armaments will never by itself accomplish this purpose. If we draw the lion's teeth and then steal his food, he will fight with his claws. The only power which can abolish warfare is a concerted control, or super-government having the power to coerce each national government to abstain from violating the rights of other nations. The final definition of these rights must rest with an international tribunal backed by the strength of the concerted government to enforce its decisions. An opportunity to aid in establishing such a super-national control was recently forfeited by the government of the United States through the rationalized, self-seeking conservatism characteristic of crowd-publics.

A few words should be added concerning social behavior in the work of law-making bodies. Assemblies have the value of permitting the representatives of various interests to meet and exchange opinions. On the other hand such bodies, like all co-acting audience-groups, are capable of being readily converted into crowds. Facilitation of emotional response, impression of universality, and the conformity attitude, especially with regard to party opinion

operate in no small degree. These factors no doubt contribute to the intolerance and narrowness of some of our local and national assemblies, as shown in prohibitive statutes, restriction of free speech, and provincial foreign policy. Such crowd influences are doubly unfortunate because the principle of delegated government demands independence of thought on the part of each representative. Influences of this type could be reduced by entrusting greater power to small, well-chosen committees. Even if this policy should arouse a cry of 'autocracy,' the situation would be no worse than the sectional crowd control and log-rolling existing at present. Another means of diminishing crowd factors in assemblies is the reduction of 'oratory' and other forms of persuasive appeal to a minimum. Finally, we should not overlook the social subvaluent characteristic of thought processes carried on in the presence of the group (p. 273). While discussion is indispensable for obtaining the broadest point of view (p. 289), it is equally necessary to have a period of solitary reflection before deciding upon abstruse questions. The solution indicated would therefore be to have the vote taken from Congressmen in their private offices, after a period of solitary thought has followed open debate. Such a procedure would also dispel the somewhat irrational attitude of conformity which we found in judgments given in the presence of others who were judging the same issue (p. 277).

b. Education. The school is preëminently the institution for socializing the individual. Modern education strives to find the original interests of the child, and to build upon these a superstructure of knowledge and skill. Simultaneously with this, education must bring about a conditioning of these approaching and withdrawing tendencies by the laws and customs of society, and must modify their efferent expression along lines which are socially constructive. The range of fundamental drives available for such educational control is broader than that upon which legal control is based; for education builds upon the approaching as well as the withdrawing reactions. In this work the school merely continues the earlier and vitally necessary training in the home. The school therefore should be an institution, not merely for endowing the individual with abstract knowledge, but for so modifying his

responses of avoidance, hunger, and love that they shall serve as means to coöperative social living.

The aim of socialization deserves fuller recognition than it has yet received in the administration of education. Training to become a citizen is no less imperative than the acquisition of knowledge and vocational habits. Students should be given systematic instruction in the afferent aspect of social behavior. Teaching the significance of tones, gestures, facial expressions, and mannerisms is of considerable social importance, since their appreciation is fundamental for the development of sympathy and tact. The child should be taught to respond to physiognomy, bearing, and other indications of personality in his associates and in adults. The desirable in human character can thus be quickly recognized, and discriminating responses established. Older children and adolescents are greatly influenced through some chosen ideal, it may be a parent or any older person, or even an historical character. Toward the behavior of this ideal their fondness and submission renders them highly suggestible.[1] Personal controls of this type offer opportunities for the establishment of traits and attitudes of the highest social value.

The classroom itself affords a valuable setting for the inculcation of moral attitudes. The submission and conformity of the individual in the co-acting group is here brought into play. Truths imparted receive added weight through the perception of their effect upon the other students; and this effect is further reinforced by circularity (p. 301). The primary groups within the school also afford the *milieu* necessary for the development of the social self (pp. 286, 333).

The school curriculum can profitably be made more social in content. This may be accomplished, first, through emphasizing humanistic studies, such as history, literature, and the social sciences, and secondly, through laying stress upon the social application of facts learned. In the higher vocations the latter method is exemplified by the teaching of social hygiene in the medical curriculum or the application of jurisprudence to social

[1] This susceptibility to adult suggestion we have previously referred to in discussing both suggestibility (p. 249) and identification (p. 367, footnote).

welfare. The occurrence of the good man in the socially deplorable business would be rendered less common through the influence of such education (Smith). Finally, the political obligations of each prospective voter should be provided for by a definite course of training.

Inasmuch as children are taught in social groups, the laws of social behavior have an important bearing upon the teaching method. Teachers are becoming more and more impressed by the possibilities of the face-to-face relations. Recitation now involves more discussion and interchange of ideas than formerly. Classes are sometimes subdivided into small discussion groups. In some colleges the inauguration of a tutorial system serves the same purpose. The modern teacher is more than a mere monitor for keeping the student fixed upon the right course; she serves as an interlocutor by whose aid the student acquires a deeper understanding of the lesson (Mead). The chief benefits to be derived from this method are increased incentive for thought, heightened interest, development of self-expressive personality traits, discovery of new facts and viewpoints through discussion, and training in social values and desirable forms of behavior.

The *co-working* situation of the class room with its response to contributory stimulations from other pupils is no less significant than the face-to-face relation (cf. Chapter XI). There is usually a facilitation of movement in the direction of the instruction given. Students work more energetically when working in groups. For some pupils, however, the classroom environment may prove distracting. Rivalry may be employed, but with careful attention to its variable effects on students of different ages, ability, and temperament, and in relation to quality of performance and type of occupation. Since social facilitation has a distinctly lower value in the more complex intellectual occupations, this type of work may well be done without the presence of co-workers. On account of the subvaluent for thinking done in the co-acting group, it is important to assign some problems for the student to think out when alone. Through suggesting details of this sort social psychology can render a distinct service to educational method.

c. Religion. Religious control, like governmental, is, in its

primitive form, a control of the inhibitory or withdrawing responses of individuals. In some branches of the Christian faith there still remain traces of control by fear, either fear of physical torment in Hell or of loss of divine salvation. Separation from 'Grace' or excommunication, brings with it an intolerable loneliness and banishment from social as well as divine approval. The experience of being 'lost' is perhaps a renewal of the childhood feeling upon being estranged from the loving parent. Conviction of sin and lurid warnings of future damnation, methods which flourished in the days of Wesley, still form a part of emotional religions and revivals.

But the Christian religion offers *positive* appeals of an equally powerful nature. In the very versatility of its controls there seems to lie the secret of the ascendance of Christianity over all other faiths in western civilization. The appeal of *love* is perhaps the dominant note. All who seek comfort from the world may find it in the fatherhood and brotherhood of the deity. Thwarted love interests and sex conflicts (such as those described in Chapter XIV) may obtain a kind of introverted resolution through a 'spiritualization' of the love, and fixation upon a Being of divine and therefore sexless nature. Celibacy of the clergy both in early and modern times, and austere religious teachings regarding sex life, are two of the many indications of this process. Ritual, hymnology, prayer, and scriptures are rich in symbols of the personal love theme carried out on a plane of exalted imagination.

Religion also offers a solace for oppression, for worldly limitation, and for other species of inferiority. The Christian faith is preëminently the religion of the humble. 'Many mansions' are in store for the poor disciple. The Beatitudes are the apotheosis of worldly humility and distress, the glory of the future life being the imaginal compensation. In the altar service of the revival the prostrate penitent is fervently exhorted to rely upon the vicarious atonement of the Savior. The crucified Christ is pointed out as the one upon whom the sins of the world have been laid. Vividly imagined, this picture offers a ready opportunity for placing upon another the sense of guilt and worthlessness carried by the penitent. Christ is not only punished for our sin, but he assumes our guilt,

thereby letting us go morally as well as physically free. It is necessary only to 'believe on Him' (that is, to believe in this divine assumption of man's iniquity). The moral inferiority is thus projected upon another, and relief is obtained from the conflict (cf. p. 368).

The majority of persons controlled by these specifically religious appeals are probably of the introverted type (pp. 116, 362). They are the tender minded, seeking in the imaginatively constructed reality of the Divine Order a release of thwarted tendencies. The church appeal is, however, broader than the purely religious appeal. The congregation is a brotherhood; and the bonds of sympathy and social participation are strong in the fellowship of religious worship. Opportunities are offered also for the development of the social self, and for the pleasures of sociability in face-to-face groups. It is thus that the church attracts and controls many of the more extroverted type.

In congregating for religious worship there lurks the possibility, often realized, of the formation of a crowd. The emotionality of the penitent seeking salvation as well as the ecstasies of those who have found it are, in revival services, facilitating stimulations of great power. Suggestions take effect in the formation of attitudes (conviction of sin) and in their release (coming forward for salvation). The influence of the more suggestible in being the first to start the movement is of great importance. Periods of prayer and religious services are often observed in order to 'prepare' for the advent of a great evangelist into a town or city. These activities have the psychological effect of establishing attitudes of profound and expectant submission toward the coming apostle (first aspect of suggestion). With such preparation the excesses characteristic of crowd phenomena are an easily predicted sequel.[1]

It is an open question whether the appeals of divine love and imaginal compensation will not always be vital elements in religious control. They are perhaps a necessary and desirable sphere of release for the introverted personality. On the other hand the progress of the church as an institution of social control is to be

[1] For a detailed account of the crowd factors in religion the student should consult F. M. Davenport: *Primitive Traits in Religious Revivals.*

sought rather from its social than from its religious development. Other-worldliness and the redemption dogma are being quietly ignored by the more progressive members of the modern clergy. Such as these have the welfare of humanity rather than the glory of God at heart. The abolishment of creed and of the symbolism of personal love and salvation would of course weaken the religious significance of the control. Yet the loss in imaginal comfort to the 'tender-minded' could be compensated by a gain in socialization. And perhaps the control of individuals through an ethical code and an altruistic love for fellow man would be of higher ultimate value to the human race than the centering of that love upon a transcendent personality.

Social Behavior and Control in the Economic Sphere

Social Behavior in Commercial Attitudes. Credit and Panic. The pursuits of manufacture and exchange offer a field for the study of special social attitudes. The good name or prestige of a business firm, though usually thought of as an attribute of the firm itself, is really an *attitude* common to a large number of patrons and citizens. It represents their readiness to deal with that company; and is built up by careful advertising and honest dealing, and strengthened in the public by the impression of universality, until it becomes a salable asset known as 'good-will.' This control over commercial attitudes we shall speak of as *economic prestige.*

Credit is a similar social attitude. It consists in the neuromuscular setting of business men to trust the individual or firm concerned. This attitude of others toward one's self is automatically established by discharging one's debts, and is rapidly disseminated through rumored reputation and inquiry. Since credit is merely an attitude in others, and not a fixed personality trait in the individual, it is subject to sudden alteration. It is conditioned not only by the character of the debtor, but by the general state of the market, in itself largely a psychological phenomenon. The heightening of credit attitudes leads to the financial 'boom'; their lowering precipitates the crisis and panic. The sequence is usually as follows. An era of prosperity brings a rapid development of business enterprise. Large ventures are undertaken for the financ-

ing of which credit is freely extended. Wages and prices rise; and for every actual dollar in hand there are involved in transactions many dollars on paper secured only by the attitude of credit. The number and magnitude of these transactions exaggerates the impression of universal prosperity (ability to meet credit obligations) and with it the credit attitude beyond the point justified by actual conditions. Speculation is encouraged. Thereupon a few reckless ventures fail; and with the news of these failures each creditor having large loans at stake becomes uneasy. The rumor now becomes one of impending depression; and the universality attitude works in the direction of reducing the willingness to give credit. Credit is withdrawn, businesses liquidate, wages and prices fall, and failures increase. The crisis rumor may be partially an expression of a wish on the part of those to whom a drop in prices would be an economic relief. Thus the phenomena of credit inflation and depression, while starting in actual economic conditions, achieve their impetus mainly through rumor and the impression of universality.

Social Control and Exploitation in Business. The aim of the business man is to increase his business; that is, to induce people to buy his product or service. The very nature therefore of business implies a ceaseless and varied endeavor toward social control. The salesman and promoter employ the art of oral suggestion, enforcing it by assuming an ascendant, face-to-face attitude and by thrusting their 'prospects' into the submissive rôle. Personality traits thus attain great importance in the selection of selling personnel and in the social contacts involved in selling.

Advertising is a form of control which has assumed gigantic and wasteful proportions in modern business. A more socialized ethics than that which the business class has evolved is necessary to curb this growing evil. Every form of appeal is employed in order to coerce individuals to buy. Protection from injury or impending disaster, sex, humor, hunger, pleasures of the palate, love of wife and children, the social self attitude, caste, social conformity, patriotism, and even love and respect for one's mother are all played upon to induce the purchase attitude and fill the coffers of the profiteer.[1] These appeals are conditioning stimuli for the

[1] Direct appeals to sex desire are often used to attract attention to advertise-

arousal of prepotent responses in a manner conducive, not to the socialization or efficiency of the consumer, but to the gain of a limited class of commercial men. Human nature is thoroughly exploited.

Advertisers do not limit themselves to control through the fundamental activities. They capitalize many other laws of social behavior. The buyer is controlled by verbal and pictorial suggestion. His submissive and conforming attitude is evoked through creating an impression that a large number (which to the unthinking individual means 'every one') is buying the product. Suggestion is further increased through quotations from individuals in authority, or through social and financial prestige. Attitudes of compensation for inferiority in physique, education, wealth, and social status are freely exploited.[1]

Such advertising involves not only unjustifiable exploitation of the human drives, but artificial stimulation of demand, wasteful establishment of consumptive ideals, and competition in extravagant styles and luxuries. Discontent and envy among the poorer classes are a further result of these enticing but expensive appeals. It is true, of course, that not all advertising merits the above criticisms. Some firms do not advertise to stimulate demand or to arouse approaching responses by irrelevant appeals; but are content merely to state the essential merits and price of their products. General culture and comfort are promoted by this class of advertising. Æsthetic improvements have also been made (although the landscape is still disfigured by bill-boards). This finer sense of social values is, however, not yet shared by the majority of business houses.

Economic institutions exert further social control through the agencies of journalism and art. Newspaper propaganda, paid for by business interests, often controls public opinion (cf. p. 308). Standards are set for literature, drama, moving pictures, and music

ments of wearing apparel and other items much less relevant. "You furnish the girl; we'll furnish the home" is a sign flaunted by a certain furniture store. "The kind of candy father used to buy to make mother happy," is the essence of an inscription circulated by a well-known confectionery firm in order to capture Mother's Day sentiment.

[1] Advertisements of prescriptions guaranteed to take the kink out of colored people's hair are among the most flagrant examples the writer has seen.

by the producers and publishers who know 'what the public wants' (and consequently what it will be willing to pay for). In these fields appeals to the controlling responses, not for cultural but for commercial ends, restricts the sphere of individual enjoyment and profit. As long as the tired seeker of recreation can be diverted by the vulgar humor of vaudeville, the covert sexuality of the farce, or the open sex appeal of the burlesque, and as long as he can identify himself with the luxury of the social life he envies on the cinematograph screen, he will have little incentive for learning to enjoy true æsthetic appeals conveyed through the same media. Spurious standards of art are thus established, and then reinforced through the impression that every one is attending and talking about these productions. The commercialized control of the economic and cultural activities of the individual retards education, checks independence of thought, heightens crowd influence, destroys art, sets false goals to endeavor, and cheapens and exploits the best things in life. It is especially deplorable that while business employs all the drives (both approaching and withdrawing) for social control, government, the institution most deserving of this prerogative for social ends, has scarcely advanced beyond the use of conditioned fear responses.

From these considerations there emerges the mission of the economic genius with the welfare of society at heart. Capitalists and financiers are men of power in every community. Success in business brings success in the leadership of civic and social reforms and of public enterprises. The common people subscribe to a cause if it is endorsed by the financial leaders; economic prestige brings personal prestige. There rests upon men of business an opportunity and a responsibility for socializing the power which they exert in society at large.

Industrial Phases: Behavior in Co-working Groups. The work of industry, like that of government, education, and religion, is conducted in groups. Industrial groups, composed for example of factory and office employees, are definitely limited to the co-acting type. The laws of behavior in response to the stimulations from co-workers find in these groups a ready application. We may expect social facilitation with its resulting social increment. Effects

upon quantity and quality of output will be found to vary with the type of work, the size of the group, the closeness of the operatives to one another, differences of ability and temperament among the workers, and other conditions as described in Chapter XI. The incentive of rivalry may be effectively used to a certain point, more especially if quality is not important. Rivalry combines with the economic incentive under bonus and piece-work systems of payment. The use of these contributory social stimulations to increase productivity is a form of social control no less potent than the control of the consumer through advertising. Where exercised without regard for the welfare of the employee such controls merit even sterner criticism than those of the commercial sphere.

Working groups are converted into crowds by happenings which release emotional and withdrawing and struggling reactions. Bad working-conditions, underpay, fatigue, monotony, and continual fear of unemployment are sufficient preparation for the arousal of panic among industrial workers. When a few of the weaker succumb the sight of the evil feared acts as a suggestion, facilitating the spread of weakness, terror, and general collapse of morale. Concerted struggle responses, as in strike violence, illustrate another phase of industrial crowd facilitation. Crowds of this sort were discussed in an earlier chapter (pp. 294, 310).

Industrial Conflict. The recent wave of industrial conflict in this country provides instructive material for the student of social behavior. The full reason for this epidemic of strikes and labor agitation is by no means clear. The condition of laborers and trade-workers has been on the whole better in recent years than ever before. The war brought an era of high wages and better living conditions which seem to have remained fairly stable ever since. Psychological causes, other than those resulting from the oppression of the worker, must be sought to explain the prevailing unrest. The rise of unions and the principle of collective bargaining have given laborers a power which they have never before felt. This *actual* power of unions is increased psychologically through the impression of universality (consciousness in each worker of the strength of his organization). With the impression of large numbers there comes also the belief in the supreme justice of demands made

by these great bodies. Control through these crowd mechanisms has been widely exercised by agitators both in assembled crowds and through radical literature.

Another cause seems equally significant in modern industrial conflict. Labor unions are not only weapons for concerted economic struggle; they are defenses organized against the imputation of inferiority. Under the influence of the Russian revolution, a movement growing out of age-old class distinction and oppression of the proletariat, American laborers sought to relieve their minds of the unpleasant consciousness of inferiority. This they did by projecting upon the capitalistic class the charge of oppression and the intent to keep them (the workers) in a state of social and economic slavery. It is true, of course, that their charge of unfair distribution of wealth is partly justified. But the sweeping and exaggerated claims made by radical leaders show that the economic drive is not the basic motive. Thwarting of the domestic and economic life is a *rationalized* cause for class hatred. It is more satisfactory to the I.W.W. member to ascribe his humble status to the injustice of capital than to his personal incompetence. He must hate capitalists accordingly, and must organize a concerted movement against them.

Various other straws point in the same direction. Coupled with the outcry against inequalities in the award of profits is the assertion that one man is entitled to as great a share as another. Labor as a whole is indispensable. It has great power as well as dignity. Each laborer should therefore participate equally with the capitalist and manager. By arguments of this sort individual differences of education, native ability, and enterprise are glossed over. Another indication of inferiority conflict is the attempt to equalize the status of labor with that of professional and executive work. The trades mechanic asserts that the doctor or lawyer 'gets paid for his brains' rather than for his time; so why should not *he* demand the same? He implies that, since brains are the basis of the claim to salary, there should be equal remuneration in the two cases. The fact that brains may differ in value is not allowed to enter the discussion. Regulations also of unions regarding apprenticeship aim toward the elevation of the trade in question.

The rule that a helper must always accompany the expert mechanic, while no doubt serving objectively useful purposes, also increases the self-esteem of the expert. Like the professional man he too must have his assistant. There has recently arisen a somewhat affected independence in the skilled and domestic trades regarding wages, hours, and readiness to serve. This attitude is a part of the general protest against possible imputation of inferior social status. It is reinforced and directed toward social control through the crowd factors in trade unionism.

What is the remedy for this unfortunate situation? The cure for all conflict lies in insight. The manual worker must realize that labor does not have to be protected against the slurs of those who do not have to work, but that it has *by its own merit* sufficient proof against such slurs. Nature has not made men equal in ability. Some merit greater remuneration than others because they make possible such rewards by rendering a rarer and more vital service to society, a service which can be given only by high capacity together with professional training. Further than this fact no inferiority exists in the status of the working man; and certainly no disgrace attaches to that status. Industrial workers must be brought to face these facts squarely. They must realize that no one is charging them with inferiority *except themselves;* and further, that much of their outcry against 'economic oppression' is a futile attempt to ward off this self-originated accusation and to escape the facts. If the worker is thus fated to remain at a modest economic and vocational level, vicarious compensations should be sought in avocational interests, wise employment of leisure and pleasures of home life. It is true that such compensations would require more favorable hours of work and better wages than some employers are willing to give. This, therefore, is the obligation which rests upon the capitalist and industrial manager. Employers must assume their share of the problem by enabling the worker to find outlets in useful and pleasurable channels for the drives which are thwarted by his limited vocational status.

Owners, directors, and managers cannot escape their duty in the resolution of the conflict of inferiority in the worker's mind. Huge profits, displays of wealth, emphasis upon differences of education

and culture as though these were the natural heritage of the rich, all tend toward increasing both the worker's feeling of inferiority and the hatred through which his envy is rationalized. To abolish provocation for this caste feeling would be one of the greatest services which the capitalist and employer could render to the cause of industrial harmony.

But a more basic adjustment, a real change of attitude in industry, is necessary before lasting harmony can be secured. There must be a partial abandonment of the diminishing returns principle upon which business is largely based. Instead of calculating the wages and benefits to be given the employees upon the basis of the *profitableness* of such measures to the firm, the basis must be the welfare of the human beings concerned. Interests of profit must be tempered by regard for the needs of the workers. This does not mean a socialistic control of industry; but merely a socialization of individual control.

To state the matter in another way, big business should be administered with two purposes instead of one. These two purposes are profit making and social adjustment. Neither of them should be sacrificed wholly to the other, but both should be kept in view. There is no argument to justify unlimited acquisition of wealth or unrestricted return for capital or ability. *Laissez faire*, right to buy in the lowest market and sell in the highest, privilege of employing, paying and discharging as one pleases, are not natural and sacred rights of mankind. They are merely useful assumptions which may become rationalizations for greed. The capitalist stresses the justice of his scheme just as the socialist preaches the justice of the confiscation of capital. In the same manner both sides in the late war prayed to the same God, and each demanded from him the right of victory. There *is* no abstract or absolute Right which can be evoked to justify either side. The immediate personal needs of human beings sweep aside these rationalized fictions. Power for social control brings with it the obligation to exercise that power wisely and well. Corporations, therefore, which control the livelihood and destinies of thousands must face the responsibility of so ordering that control as to satisfy the needs of human life and bring contentment to their workers.

We may summarize under four principles the basic requirements for a truly democratic social order. These are: (1) a fair chance for all; (2) reward according to value of the service rendered (a principle involving inevitable inequalities of reward); (3) the abolishment of inferiority attitude and envy among the members of the humbler vocations; and (4) the recognition by business and industry that their power for social control renders obligatory the adjustment of that control to the prepotent drives and psychological needs of their employees.

Social Continuity and Change

The Concept of Social Heredity. In discussing social unity and control we have been concerned chiefly with problems of contemporary social organization. The unity of society through time, or historical continuity from the past to the present, is another field of inquiry in social science. Here belong the stabilizing habits of past generations transmitted as customs, folkways, and laws. The continuity and development of the institutions of control also form a part of this study. These traditional safeguards of the individual's needs have given society a stable and lasting character. Another heritage binding the present to the past is the body of transmitted culture embraced in science, arts, inventions, politics, literature, and philosophy. The acquisition of this knowledge from the elders affords to each generation valuable tools for the discovery of further knowledge. Hence, among peoples fortunate enough to produce geniuses originally or to acquire the beginnings of culture through contact with other peoples, cultural development has proceeded at a fairly geometrical rate.

These two sets of transmitted influences, the laws or *mores* and the intellectual and material culture, have been figuratively but aptly included under the term 'social inheritance,' or 'social heredity.' The importance of this concept is shown by considering the total inadequacy of the *biological* inheritance (the innate reactions of the new-born infant described in Chapter III) for adjusting the individual to his present environment. Human behavior would rest in an inconceivably primitive stage if these innate reflex mechanisms were not conditioned and modified in youth through

the accumulated experience of past generations. By responding to present social stimuli conveying this experience the youth steps with seven league boots over the entire cultural history of mankind, and arrives at maturity a socialized twentieth-century man.

The Social Character of the Individual's Thinking. The stability of human society is best appreciated when we realize that thought itself has its origin in social contacts. Concepts, or symbol reactions (p. 197), the essential tools of thinking, have evolved through language and have therefore a social origin. A word had its original use as a means of representing an object *to another*, and *controlling another's behavior* with reference to that object (cf. pp. 187–88). To the hearer it was originally a stimulus to assume an attitude for reacting to the object denoted in compliance with the intent of the speaker and in conformity with the attitudes of others toward the same stimulus. The word thus evokes a response to the represented object *in its social setting* (Mead). This fact gives to meaning itself a fundamental social significance.

Concepts are therefore social in character: they denote or represent objects common to all members of the group. The attitudes of response to these concepts (meaning) are moreover identical among all the group members. Times, places, customs, heroes, natural processes, occasions for sentiment, and many other matters form common objects around which center the similar responses of all the members of the group.[1] Conformity of response furthermore standardizes the usage of concepts and renders them resistant to rapid change. This stabilization accounts for the difficulty of establishing reforms of spelling or of systems of measure (Peterson). In the broader aspects also of thought we find an inseparable social significance. In order to comprehend a question in all of its bearings we must study the history of social discussion which has centered about it up to the present time (Ayers).

[1] Cf. Smith and Guthrie: *General Psychology in Terms of Behavior*, ch. 7. Such 'institutionalized objects' and the common reactions toward them Professor Kantor regards as the main field of study for social psychology. This view, though suggestive, is, in the writer's opinion, too narrow. It presents the communal aspects of human action; but it unduly neglects the great field of behavior in which *another person* (rather than a common object) is the essential stimulus. (See J. R. Kantor· "An Essay Toward an Institutional Conception of Social Psychology," *American Journal of Sociology*, 1921–22, xxvii, 611–27; 758–79; also, "How is a Science of Social Psychology Possible?" *Journal of Abnormal Psychology and Social Psychology*, 1922, xvii, 62–78.)

The social nature of thinking has engaged the attention of philosophers, who have pointed out its profound significance for the theory of knowledge. The validity of human knowledge for ascertaining ultimate truth is conditioned by the social character of the instruments of knowledge. Reality is seen from the standpoint of human society. As Professor Ames has expressed it, "Consciousness is related to the order of nature in and through the social order." [1] This identity between the social attribute and reality in thinking is illustrated by the confusion existing in primitive minds between the name of a thing (social characterization) and the thing itself. A peasant is said to have remarked that the hardest thing for him to understand about astronomy was how they were able to find out what the *names* of the stars were!

In the infant as in the human race the development of thought is, through language, inseparably connected with stimulation from the social group. So long as the baby cannot use words he has but slight possibility of noting the essential, common elements of various situations; for words are symbols by means of which such abstraction is carried on. Language calls attention to these common elements by assigning names to them.[2] A word 'fixes' a workable concept for use in future analysis and generalization. It furnishes a handle by which to grasp the essentials of any new situation. The acquisition of concepts within the group thus gives the child a foothold for climbing the heights of knowledge which are his social inheritance.

We may summarize the rôle of language as a vehicle for social continuity in the following statements: (1) Language makes possible the accumulation and recording of stabilizing and cultural tradition from generation to generation. (2) It gives a social aspect to meaning and to human knowledge through the community of behavior which it evokes toward the denoted objects. (3) It serves as a stimulus for controlling and modifying the individual's

[1] "Social Consciousness and its Object," *Psychological Bulletin*, 1911, VIII, 407–16.

[2] For example, the writer's child having seen a box turned over, and having been told that it was 'upside-down,' was later found lying on his back in his crib with feet in the air, remarking that he was "side-down in bed." The previous use of the term had *called his attention* to an abstracted situation, namely, a position which any object might assume. The social environment, through language, had thus given him a new concept to think with.

behavior through learning in accordance with the social inheritance. And (4) it equips the individual with the tools of thinking.

Social Behavior in Discovery and Invention. The continuity of society in time does not require the transmission of ancestral habits in rigid, unalterable form. With changing environment, with increase of knowledge, and with the labor of geniuses there occurs a gradual change in the social order. The chief instrumentalities for this change are scientific discoveries and inventions. Through these a broader vision of man and nature is obtained, and needs are fulfilled upon a more efficient level.

The interweaving of the social influence into human reasoning, while it gives solidarity and permanence to the group, produces also a fixity of thought habits and resistance to change. Attitudes of conformity further reinforce this conservative tendency. The inventor and the discoverer, however, are more plastic in their thought responses than other men. They cast aside traditional impediments and conventional ways of thinking. They stand alone in the detachment from social influence from which they approach their problems.[1] Stimuli evoke from them responses often quite at variance with the customary mode of human reaction. This fact is well illustrated by the invention of the cotton gin. Cotton producers had for a long time despaired of being able to produce a machine that would 'extract the seeds from the cotton.' It remained for a northern inventor, unfamiliar with cotton manufacture, and therefore unhampered by fixed habits of thought, to think of a contrivance to *take the cotton out of the seeds.*

While we are stressing the individuality of thought in the genius, it must not be forgotten that a *social background* of culture is absolutely necessary as a basis and starting point for his work. Few inventions are unique discoveries; most of them are perfections of previous discoveries. The steam engine has a history which extends from the second century B.C. to the present time. Watt was merely an outstanding figure among the many contributors to its development. The course of invention is similar to that of

[1] In the act itself of thinking we have also seen that solitude is necessary for the highest attainment. Thinking carried out in a social group partakes of conversational expansiveness and shows a subvaluent in quality (pp. 273–74).

discussion (p. 289). The product of one inventor's work is a stimulus which evokes a response in another. Unlike the case of discussion, however, the behavior which produces the stimulus may be widely separated in time and space from the response evoked. This response, as in discussion, is neither a mere duplication of the earlier work nor a wholly new production; it is a *new turn* given to the inventor's thought by the product of an earlier inventor's genius. A modification is discovered which better adapts the original invention to the need which set both thinkers working. Without the stimulation of the earlier invention this particular turn of thought might never have been produced.

There have been pointed out by Professor Creighton three aspects from which social influences may be seen to have determined scientific thinking. First, individual problems of any magnitude are also social problems. Universal human need sets the thinker to work. Secondly, stimulation of one individual by the behavior or the work of another (as described above) is of fundamental value. Various alternatives arise from the suggestions of various individuals, or from different points of view representing the opinions of others, assumed by the thinker at different times. Thirdly, the discovery must be phrased in language, and thus made susceptible of verification by others. Social confirmation is necessary to establish its validity.

Leadership. Social change, as we have just seen, results from the products of the inventive, scientific, and artistic genius of special individuals. It results also from another type of personal agency, namely leadership. Leadership produces social change, not through contributions to knowledge or material culture, but through the immediate social behavior of the leader. Leadership, according to our present usage, means the direct, face-to-face contact between leader and followers: it is personal social control. The promoter and organizer are leaders *par excellence*, for they compel others to carry out their suggestions. Persons of great social wisdom or inventive power often lack the ability to control others for the execution of their plans. For this reason we must distinguish between intellectual eminence and leadership. We shall use the term 'leadership' to mean the phenomenon of control

of the followers by the leader, rather than the personal trait, or traits, of the individual who leads. The latter will be discussed in a separate section.

The most important factor in the rise of a leader is personal prestige. This, like economic prestige, is a phenomenon existing not in the person himself, but in the attitudes of others toward him. An illustration will make the matter clear. Suppose we go to a theater and witness the work of a talented young actor. Our emotions are stirred, and we carry away the impression that this man thoroughly understands his art; but it has not occurred to us that he is in any sense *great*. The next day our glance falls upon a placard in a shop window announcing the appearance of so-and-so (the actor we have seen) who is "now considered America's Foremost Tragedian." Our former judgment is speedily reinforced by an impression of universality. We imagine the entire public to be talking about the 'new star' and accepting him with acclaim. He is no longer merely a good actor in our opinion, but a *great* actor. Attitudes of this type contribute to the fame and power of the leader. The impression of universality through the press or rumor strengthens the belief in the superlative gifts which he is supposed to possess; and all who hear or read become submissive toward whatever he may do or say. We may speak of this phenomenon as *personality-prestige* to distinguish it from the 'economic prestige' of business firms. The whole propaganda may of course be false, as is frequently the case in political leadership. Prestige lies rather in the social attitudes of those surrounding the person than in his own character.

Symbolic devices add to the prestige attitude of followers toward their leader. The honorary title, the degree, the 'shoulder straps' of the army officer, and the crown and scepter of kings are examples of such symbolism. These objects represent power; they also establish a transfer (conditioning) of the attitude usually evoked toward the power symbolized to the person who displays the symbols. The private is taught that in saluting the officer he is saluting the majesty of the American People. The prestige of the officer as an individual is greatly increased by exacting this form of salutation.

Control through leadership is based largely upon the suggestion

process. Some leaders are merely 'crowd exponents,' who seize upon motives and attitudes already prepared in all, and use their personality-prestige to reinforce suggestions releasing these attitudes. Others are leaders in a more fundamental sense. They *build up* attitudes in the public which they lead, and educate their followers to adopt a course for the ultimate social good rather than for the immediate release of prepotent drives. The process requires patience, endurance, and greatness of mind, traits which are of higher worth than adventitious prestige of personality. Such 'group builders' make use of all three phases of the suggestion process (cf. Chapter X).

In leadership, as in all suggestion processes, it is necessary that all the inhibitions blocking the acceptance of the suggestion be overcome. Leadership thus knows no half-way stage: it is a matter of 'all or none.' While the public is *with* the leader it follows slavishly his every direction. His character is regarded as without flaw. He is the ideal. Such blind leader-worship has yielded grotesque results. This was the case, for example, in the election to the mayoralty of a great city of a favorite of the hour who had previously borne a prison record. When a few adherents begin to question the action of the leader his decline is precipitous. His suggestions fail to quell the antagonistic attitudes: therefore his power is lost.

Since leaders usually secure their power through suggestion and crowd control, rather than through reason, one may question whether leadership is wholly desirable. It would doubtless be better if we could moderate its all-or-none character and introduce discriminating action among the followers. This change would, however, greatly restrict the power of the leader. It would also require a considerable campaign of education. People are more readily persuaded to follow as one of a crowd under a leader than to labor separately and constructively for some social end. As Professor Steiner has indicated, the rule by persuasive leaders who capitalize the mechanisms of crowd-influence stands in sharp contrast to the enlightened coördination of individual effort in community welfare.[1] While the latter method may be the more

[1] "Community Organization and the Crowd Spirit," *Journal of Social Forces*,

desirable, it is more remote from present realization. For the present we should perhaps be willing to use the inferior means; that is, crowd leadership, for the sake of the ends to be gained.

Differences of ascendance, intelligence, social participation, and drive for control will probably always tend to produce leadership. Some fulfill their destinies in leading, others in following. Still another fact may be cited in favor of personal leadership. Whereas government is still based upon the negative or avoiding-response type of control, civic leadership employs the positive, approaching drives of human behavior as a means of achieving its ends.

The Personality of the Leader. Turning now to the qualities which characterize the leader, we find the trait of *ascendance* to be of paramount importance. Unless the leader assumes an ascendant, dominating rôle, leadership in the sense here defined is impossible. Men must be made to adopt a submissive attitude before they can be controlled by personal suggestion. The leader must be endowed in their minds with that personality-prestige described in the preceding section. Ascendance of manner is usually combined with physical power. Tallness of stature, though not always necessary, is of great service to leaders. It is true, however, that many leaders have been small or frail men. Lack of physical size is sometimes a direct basis for the development of compensatory traits of great energy and endurance. Other traits valuable to leaders are high motility (rapid and energetic reactions), tonus shown in gesture and ring of the voice (cf. p. 219), erect, aggressive carriage, tenacity, face-to-face mode of address, and the reinforcement of energy flowing from a fairly high emotional level. Feeling and outward action are, however, under perfect control; they are governed by a certain restraint which gives the impression of an unlimited reserve of power behind them. The true leader never gives the appearance of playing his last card. The characteristics described in this paragraph were probably in the mind of Emerson when he wrote that the highest greatness does not need works to reveal it, but is "self-evident."

1923, I, 221–26. The reader will find in this article a number of instructive examples of crowd control and its exploitation for the sake of community enterprise.

Allied with the appearance of reserve power is the impression that there are intellectual resources or plans of action in the leader's mind which are not comprehended by the ordinary man. This air of inscrutability increases submission of attitude through the awe of the unknown and the veneration of genius. There must, however, be set up many points of contact between the leader and his followers. The apparent contradiction may be explained by saying that while the leader is expansive regarding the field of action which he dominates, he is reclusive concerning his personal life and underlying plans and motives. High intelligence is necessary for the constructive type of leadership. Even the demagogue must present the appearance of having greater knowledge of the situation than that possessed by the common man.

The true leader also stands high in the group of traits described under sociality (Chapter V). He is keenly susceptible to social stimulation, and controls his constituents largely through his understanding of their natures. His ascendance is moderated by tact and true zeal for the social welfare. Social participation is one of his strongest interests, although in mingling with and controlling the throng he holds his own private life somewhat aloof. Character in the ablest leaders is usually of a high order. The leader's consciousness of social self is both strong and elevated.

One of the central traits of the constructive leader is his *drive*. He is truly appreciated only in action; he leads *in some cause*. The project for which he stands is likely to be the key-note of his entire personality. Upon this he focalizes all his energy and ability. For this reason many leaders appear to be narrow in their intensity. This is especially true of revolutionary leaders such as Cromwell and Samuel Adams, and upon a lower plane, Robespierre, Alexander Dowie, and Carrie Nation. In such persons compensation for inferiority, moral inadequacy, or other defense attitudes, may be the causal factor behind their leadership in a particular issue (pp. 373–74). High intelligence, ascendance, and motility sometimes accompany these factors of conflict and projection. Most crusade leadership is of this radical type. It may, of course, be productive of good if the drive of the leader allies itself with some objectively needed social change. For most constructive enterprises, however

and for social crises there is required a leader having a more sanely balanced and objective motivation.

Popular Movements. A faction headed by a leader is usually a heterogeneous crowd or public. Many participants are probably actuated by the same constructive drive or projected conflict as the leader himself. Others join for different reasons, partly because, as Martin points out, the crowd-principles are framed in sufficiently general terms to be accepted as the goal of many and diverse motives. Unlike in origin, the drives of the multitude converge upon a single course of action proposed by the leader. A large number of the followers of radical leadership are not individuals of radical personality. Their interest may have been won by the true merits of the proposed change. Nearly all popular movements are syntheses of diverse drives, conflicts, and sentiments in the public which participates. The leader evokes concerted action and gives definite aim to these individual forces. Social movements thus bear the stamp of both the genius and the personal bias of their leaders.

Lines of Future Development

Social Progress as the Well-Being of the Individual. Our outlined survey of social behavior in its relation to social phenomena is now completed. In conclusion there remain to be considered a few questions of a broad, ethical nature. What improvements, we may ask, may be hoped for within the social order; and how may they be brought about? Many theories of social progress have been advanced. Most of them are conceived from the sociological point of view, that is, as improvements in the structure, organization, and controls of society as such. There has been postulated a super-organic evolution, working, not through morphological changes, but through human intelligence and culture, and advancing toward the goal of the perfect society. Several difficulties are encountered in this notion of the progress of society as a whole. First, the *a priori* principle of super-organic evolution and natural selection in groups as wholes is hypothetical, and at best very limited in modern life. Society is not necessarily progressing in a fixed direction or toward a definite goal, but is changing, now this way, now that, according to the laws of human be-

havior interacting with environmental and personal agencies. A second objection to this notion of social progress is that we lack a standard for determining what the ideal society should be. Would not the perfect type of social order differ for every people and every age? Since we have no experience upon which to pattern our ideal of society as a whole, this ideal must necessarily remain a mere postulate.

We can, however, judge the social order from the standpoint of its *internal* excellence, that is, from the perfection of the adjustments secured by the *individuals who compose it.* The good society is thus to be conceived as that which is good for its members. Its merit lies solely in *their* happiness. In the first chapter of this book we observed that the true psychological and organic entity is the individual, not the social group. We may now add that the *unit of progress* is not society as a whole, but again the individual. Social progress is merely an inexact term for the enhancement of individual welfare.

What. then, is meant by individual welfare? In its broadest aspect this question has challenged philosophic thought since Socrates; and we cannot hope to solve it fully here. Some attempt, however, may be made to define this 'highest good' from a practical and scientific viewpoint. Our thesis can perhaps be best presented through antithesis. The highest aim of life is not the achievement of an ideal of perfection. It is not the conquest of the 'Absolute' over the finite and conditional, nor of 'Reason' over the so-called baser desires. It is not even the state of perfect satisfaction of every want. Attainments of this sort would bring human behavior to a static and inert condition, quite at variance with the fundamental laws of life. The drive behind accomplishment has always been the need to fulfill some prepotent demand *not satisfied within the present environment.* Maladjustment and struggle will probably continue to be the fountainhead of progress as long as the human race exists. Perfection of adjustment would therefore destroy the very stuff of which progress is made. There is no escape from this venerable paradox. We are forced to recognize that the highest happiness lies not in the goal achieved, but in the perpetual sequence of struggle and achievement.

Life is essentially a process of disturbing and restoring equilibrium, of need and fulfillment. As derived drives, or interests, multiply and diversify, the struggle for adjustment becomes a problem of ever-increasing complexity, and success in the struggle brings a richness and variety of satisfactions not experienced in the more primitive stages. The *Summum Bonum* lies not in an ultimate attainment, but in these very cycles of effort and success, new effort and further success, repeating themselves endlessly at ever newer and more intricate levels throughout life. Human progress is thus a *process*, eternally moving. Its current runs in the stream of life itself. The notion that it implies an ultimate and static goal is a philosophic fiction.

The aim of life, moreover, is not one but many. There are, first, the processes of adjustment of the drives which are fundamental in human behavior. Upon these are based a multitude of habits, or derived drives, all demanding satisfaction through use. Transcending the bare essentials of physical existence, these drives pervade and enrich the great spheres of æsthetic, religious, intellectual, and social development. All of these interests finally crave fulfillment. Abilities of all sorts, native and acquired, also present a claim for their realization in the tasks of life. Growth and learning produce an increasing complexity in the pattern, a complexity which demands an intricate and enlightened mode of adjustment. The best living, as in the old Greek view, consists in the fullest exercise of this behavior equipment in the struggles and satisfactions of life.

Our conception of progress is therefore to be individual rather than collective, dynamic in aim rather than static, a struggle rewarded by tentative adjustment rather than perfect and final adjustment. It is a process, biological and mechanistic. It is the exercise of a plurality of living functions, rather than the pursuit of a single fixed and transcendental goal.

Summary: Social Behavior in Relation to Progress. Progress is therefore in the fullest sense an increased success in living. It means that one is to be faced with problems of ever-increasing complexity, but problems which one has the power to solve, and which in the solving yield a wider and richer range of approaching

responses and enjoyments. Conflicts which diminish our power to solve these problems must be removed by effective resolution. A final common path must be discovered which releases in modified form both the socialized habit and the primitive drive which opposes it. Justice is required for all phases of human nature if our functional ideal of progress is to be realized.

A nice balance of socialization and adjustment is therefore required within the individual. Release must be accorded to all the prepotent reactions. At the same time, this release must be so modified by early social environment and by control through social institutions that it does not obstruct the release of the same responses in others. Wholesome expression of the vital activities in each individual must work hand in hand with the socialization of his behavior for the sake of others. The progress of the individual, however, must not be thwarted by an over-socialized or socialistic control of each by all. Though drives be socially modified they must still operate in a field of fair competition in which differences of ability and industry receive their reward.

Among the derived drives or habits acquired early in life and operating almost with the force of innate reactions, the drives for social contact and approval stand out conspicuously. The presence of others has conditioned not only our withdrawing reaction (moral behavior), but also our pleasurable, approaching responses. We have learned to love society for itself. Fostering this type of development contributes richly to the life of the individual; for he lives in a sense in the pleasures and adjustments of others as well as in his own. Primary sociability groups and a socialized plan of education are means which are useful toward this end. Personal control, conversation, suggestion, sympathy, and humor are among the processes which may be used to inculcate traits of sociability. The social drives should be directed early toward the fixation of desirable traits of character. For the socially inclined, incentives may be readily discovered for establishing approved habits as well as deterrents from conduct which meets with social disapproval.

The danger of *over-development* of the social drives through childhood training must also be recognized. Love which is fixated too strongly upon the parent may thwart the normal expression of

the sex drive in maturity. Exaggerated submission to elders or to religious teaching has an equally unfavorable effect upon the struggle responses. Over-socialization within the family produces weak, subdued, and emotionally unstable personalities. *Rapport* of the child with the parent should offer a means for the training of capacities and the assimilation of desirable character traits. Yet this must be done without forming attachments so strong as to lead to serious conflict in mature life.

The individual's attitude toward reality and toward the social sphere may be made an asset in his progressive adjustments. Were every human being to acquire insight, and to see himself as he truly is, projected inadequacies, leading to destructive social conflicts, would be abolished. Constructive compensatory effort would become the rule. A false or deluded ideal of self should not hide from the individual his true nature. The desire to establish attitudes of social approval toward one's self is a spur to the highest self-development. But this is only true provided the drive is to merit as well as to attain the esteem of others. Honesty with one's self concerning one's traits, abilities, and position should be inculcated by special training in home and school. The possession of insight is a prerequisite for harmonious social adjustment.

The response to social stimulation in the group and crowd is also significant for the theory of individual well-being. Social facilitation may be used to increase coöperative achievement instead of being left to the devices of the orator. The impression of universality and attitude of conformity have a higher mission than the spread of propaganda and crowd hatreds; they may be employed to reinforce ethical conduct and social standards chosen wisely and for the good of all. It is imperative that the press and other agents of publicity cease to foster the belief that people are universally interested in wasteful fashions, sentimentalities, hysterical hatreds, fears, scandals, and murders. There is need, instead, of establishing the belief that *socialized and progressive attitudes* are becoming universal and therefore imperative for the individual.

Socialized freedom for life adjustments may be promoted by emancipating the individual's moral standards from crowd influence. Broad and successful living forbids us to rationalize our

private cheatings and hostilities into acts of social justice through the support of a crowd whose members all desire the same excuse. The truly moral man does not require such self-deception. For him the right is identical with the welfare of all, not with the desire of his particular faction. Public opinion and standards of thought and conduct are in need of similar emancipation. We must live our lives to the satisfaction of our own ideals, with profound respect for the rights of others, but without regard for their prejudices and crowd-like intolerance. Only with clear insight and unfettered by crowd-control can we fully realize our possibilities for successful living.

Correction of abuses in the social institutions and in the sex relationship is a further means of releasing the capacities for a well-rounded life. Economic controls should be made to relinquish their exploitation of prepotent drives and conflicts for private gain. Business interests must cease to prey upon human suggestibility and debauch both popular ideals and art. Workers must be freed from the stigma and the self-accusation of inferior social caste. There is needed also the recognition of the moral independence of the growing girl and the release of woman from her dwarfing subjugation to a male code of rationalized chivalry. The institution of government can be made an affair of popular social participation, rather than an agency for inculcating fear and repressing vital tendencies. For religion there are greater possibilities of social service than the pampering of weakness and the control of the individual through attitudes of moral inferiority and thwarted sexual desire. The church can be made an instrument for the amelioration of social adjustments rather than a means of escape from them. And finally, through the socialization of the school, educational aims, methods, and curricula can be turned to the service of progressive living.

In all of these ways social behavior and the social inheritance can be brought into the service of more adequate adjustment. The individual, through such reforms, will be assisted in carrying on the advancing cycle of problem and solution, of need and fulfillment. He will be enabled, moreover, to carry it on in coöperation with his fellows, and through the needs and satisfactions of the social life

itself. But this is not all. Social continuity teaches us that the social behavior and adjustments of one generation are, if successful, handed on to posterity as useful rules of living. We thus live on in the habit systems of succeeding generations in proportion to the value of our contribution to the social order. The stimulations which our behavior gives to others are perpetuated in a vital tradition for the guidance of the ages to come. Life is enriched not only through the scope of one's own adjustments, but through the influence of those adjustments re-embodied in the lives of others. Progress which is the achievement of the individual becomes the heritage of the ages.

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